SAMSUNG

# COLOR TELEVISION RECEIVER

Chassis : S51A
Model: CK6202X3S/NWT
CK6202X3X/BWT

# SERVICE Manual

## COLOR TELEVISION RECEIVER

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# 1. Precautions

Follow these safety, servicing and ESD precautions to prevent damage and protect against potential hazards such as electrical shock and X-rays.

## 1-1 Safety Precautions

1. Be sure that all of the built-in protective devices are replaced. Restore any missing protective shields.

2. When reinstalling the chassis and its assemblies, be sure to restore all protective devices, including: nonmetallic control knobs and compartment covers.

3. Make sure that there are no cabinet openings through which people—particularly children—might insert fingers and contact dangerous voltages. Such openings include the spacing between the picture tube and the cabinet mask, excessively wide cabinet ventilation slots, and improperly fitted back covers.

   If the measured resistance is less than 1.0 megohm or greater than 5.2 megohms, an abnormality exists that must be corrected before the unit is returned to the customer.

4. Leakage Current Hot Check (Figure 1-1):
   Warning: Do not use an isolation transformer during this test. Use a leakage-current tester or a metering system that complies with American National Standards Institute (ANIS C101.1, Leakage Current for Appliances), and Underwriters Laboratories (UL Publication UL1410, 59.7).

5. With the unit completely reassembled, plug the AC line cord directly into the power outlet. With the unit's AC switch first in the ON position and then OFF, measure the current between a known earth ground (metal water pipe, conduit, etc.) and all exposed metal parts, including: antennas, handle brackets, metal cabinets, screwheads and control shafts. The current measured should not exceed 0.5 milliamp. Reverse the power-plug prongs in the AC outlet and repeat the test.

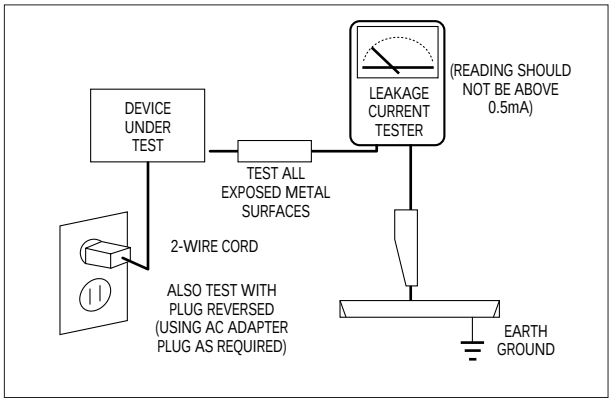

DEVICE UNDER TEST
LEAKAGE CURRENT TESTER
(READING SHOULD NOT BE ABOVE 0.5mA)
TEST ALL EXPOSED METAL SURFACES
2-WIRE CORD
ALSO TEST WITH PLUG REVERSED (USING AC ADAPTER PLUG AS REQUIRED)
EARTH GROUND

Fig. 1-1 AC Leakage Test

6. Antenna Cold Check:
   With the unit's AC plug disconnected from the AC source, connect an electrical jumper across the two AC prongs. Connect one lead of the ohmmeter to an AC prong. Connect the other lead to the coaxial connector.

7. X-ray Limits:
   The picture tube is especially designed to prohibit X-ray emissions. To ensure continued X-ray protection, replace the picture tube only with one that is the same type as the original. Carefully reinstall the picture tube shields and mounting hardware; these also provide X-ray protection.

8. High Voltage Limits:
   High voltage must be measured each time servicing is done on the B+, horizontal deflection or high voltage circuits. Correct operation of the X-ray protection circuits must be reconfirmed whenever they are serviced. (X-ray protection circuits also may be called "horizontal disable" or "hold-down".)

   Heed the high voltage limits. These include the X–ray Protection Specifications Label, and the Product Safety and X-ray Warning Note on the service data schematic.

## 1-1 Safety Precautions (Continued)

9. High voltage is maintained within specified limits by close-tolerance, safety-related components and adjustments. If the high voltage exceeds the specified limits, check each of the special components.

10. Design Alteration Warning:
Never alter or add to the mechanical or electrical design of this unit. Example: Do not add auxiliary audio or video connectors. Such alterations might create a safety hazard. Also, any design changes or additions will void the manufacturer's warranty.

11. Hot Chassis Warning:
Some TV receiver chassis are electrically connected directly to one conductor of the AC power cord. If an isolation transformer is not used, these units may be safely serviced only if the AC power plug is inserted so that the chassis is connected to the ground side of the AC source.

    To confirm that the AC power plug is inserted correctly, do the following: Using an AC voltmeter, measure the voltage between the chassis and a known earth ground. If the reading is greater than 1.0V, remove the AC power plug, reverse its polarity and reinsert. Re-measure the voltage between the chassis and ground.

12. Some TV chassis are designed to operate with 85 volts AC between chassis and ground, regardless of the AC plug polarity. These units can be safely serviced only if an isolation transformer inserted between the receiver and the power source.

13. Some TV chassis have a secondary ground system in addition to the main chassis ground. This secondary ground system is not isolated from the AC power line. The two ground systems are electrically separated by insulating material that must not be defeated or altered.

14. Components, parts and wiring that appear to have overheated or that are otherwise damaged should be replaced with parts that meet the original specifications. Always determine the cause of damage or overheating, and correct any potential hazards.

15. Observe the original lead dress, especially near the following areas: Antenna wiring, sharp edges, and especially the AC and high voltage power supplies. Always inspect for pinched, out-of-place, or frayed wiring. Do not change the spacing between components and the printed circuit board. Check the AC power cord for damage. Make sure that leads and components do not touch thermally hot parts.

16. Picture Tube Implosion Warning:
The picture tube in this receiver employs "integral implosion" protection. To ensure continued implosion protection, make sure that the replacement picture tube is the same as the original.

17. Do not remove, install or handle the picture tube without first putting on shatterproof goggles equipped with side shields. Never handle the picture tube by its neck. Some "in-line" picture tubes are equipped with a permanently attached deflection yoke; do not try to remove such "permanently attached" yokes from the picture tube.

18. Product Safety Notice:
Some electrical and mechanical parts have special safety-related characteristics which might not be obvious from visual inspection. These safety features and the protection they give might be lost if the replacement component differs from the original—even if the replacement is rated for higher voltage, wattage, etc.

    Components that are critical for safety are indicated in the circuit diagram by shading, (⚠) or (⚠).
    Use replacement components that have the same ratings, especially for flame resistance and dielectric strength specifications.
    A replacement part that does not have the same safety characteristics as the original might create shock, fire or other hazards.

## 1-2 Servicing Precautions

Warning1: First read the "Safety Precautions" section of this manual. If some unforeseen circumstance creates a conflict between the servicing and safety precautions, always follow the safety precautions.
Warning2: An electrolytic capacitor installed with the wrong polarity might explode.

1. Servicing precautions are printed on the cabinet. Follow them.

2. Always unplug the unit's AC power cord from the AC power source before attempting to: (a) Remove or reinstall any component or assembly, (b) Disconnect an electrical plug or connector, (c) Connect a test component in parallel with an electrolytic capacitor.

3. Some components are raised above the printed circuit board for safety. An insulation tube or tape is sometimes used. The internal wiring is sometimes clamped to prevent contact with thermally hot components. Reinstall all such elements to their original position.

4. After servicing, always check that the screws, components and wiring have been correctly reinstalled. Make sure that the portion around the serviced part has not been damaged.

5. Check the insulation between the blades of the AC plug and accessible conductive parts (examples: metal panels, input terminals and earphone jacks).

6. Insulation Checking Procedure: Disconnect the power cord from the AC source and turn the power switch ON. Connect an insulation resistance meter (500V) to the blades of the AC plug.

   The insulation resistance between each blade of the AC plug and accessible conductive parts (see above) should be greater than 1 megohm.

7. Never defeat any of the B+ voltage interlocks. Do not apply AC power to the unit (or any of its assemblies) unless all solid-state heat sinks are correctly installed.

8. Always connect a test instrument's ground lead to the instrument chassis ground before connecting the positive lead; always remove the instrument's ground lead last.

## 1-3 Precautions for Electrostatically Sensitive Devices (ESDs)

1. Some semiconductor ("solid state") devices are easily damaged by static electricity. Such components are called Electrostatically Sensitive Devices (ESDs); examples include integrated circuits and some field-effect transistors. The following techniques will reduce the occurrence of component damage caused by static electricity.

2. Immediately before handling any semicon ductor components or assemblies, drain the electrostatic charge from your body by touching a known earth ground. Alternatively, wear a discharging wrist-strap device. (Be sure to remove it prior to applying power—this is an electric shock precaution.)

3. After removing an ESD-equipped assembly, place it on a conductive surface such as aluminum foil to prevent accumulation of electrostatic charge.

4. Do not use freon-propelled chemicals. These can generate electrical charges that damage ESDs.

5. Use only a grounded-tip soldering iron when soldering or unsoldering ESDs.

6. Use only an anti-static solder removal device. Many solder removal devices are not rated as "anti-static"; these can accumulate sufficient electrical charge to damage ESDs.

7. Do not remove a replacement ESD from its protective package until you are ready to install it. Most replacement ESDs are packaged with leads that are electrically shorted together by conductive foam, aluminum foil or other conductive materials.

8. Immediately before removing the protective material from the leads of a replacement ESD, touch the protective material to the chassis or circuit assembly into which the device will be installed.

9. Minimize body motions when handling unpackaged replacement ESDs. Motions such as brushing clothes together, or lifting a foot from a carpeted floor can generate enough static electricity to damage an ESD.

# 2. Specifications and IC Data

## 2-1 Specifications

Television System:

| MODEL | SYSTEM |
|---|---|
| CI | PAL-I (UHF) |
| CII | PAL-I (VHF/UHF) |
| CX | PAL-B/G,SECAM-B/G |
| CK | PAL-B/G,D/K,SECAM-B/G,D/K |
| CB | PAL-B/G |
| CF | SECAM-L/L', PAL/SECAM-B/G |

Channels:

| SYSTEM / BAND | PAL/SECAM -B/G,I | PAL/SECAM -D/K | SECAM-K1, PAL-D |
|---|---|---|---|
| VHF | 2-12 | 1-13 | 2-9 |
| UHF | 21-69 | 21-69 | 13-57 |

Intermediate-Frequencies(MHz):

| SYSTEM / BAND | PAL/SECAM -B/G | PAL/SECAM -D/K,K1 | PAL-I | SECAM-L | SECAM-L' |
|---|---|---|---|---|---|
| Picture IF Carrier | 38.90 | 38.90 | 38.90 | 38.90 | 34.50 |
| Sound IF Carrier | 33.40 | 32.40 | 32.90 | 34.40 | 41.00 |
| Color Sub Carrier | 34.47 | 34.47 | 34.47 | 34.47 | 38.93 |

Picture Tube:

| | | |
|---|---|---|
| 21 Inch | A51EER131X31 | Quick start, in-line-gun, Black stripe, 90° degree deflection |
| 25 Inch | A59EAK071X01 (Normal)<br>A59EAK552X21 (Invar) | |
| 28 Inch | A66EAK071X01 (Normal)<br>A66EAK552X21 (Invar) | |
| 30 Inch | A70QBZ791X | |

Power Requirements: AC 230 V, 50Hz or AC 220 ~ 240 V, 50Hz

Antenna Input Impedance:

VHF,UHF:Telescopic dipole antenna(75Ω unbalanced type)

Speaker Impedance: 8Ω , 10W + 10W or 16Ω , 5W + 5W (533C only)

## 2-2 IC Line Up

| LOC NO | NO | Specification | Description | Remarks |
|---|---|---|---|---|
| HIC101 | 1 | PAP103T | IF PRE-AMP | |
| IC201 | 2 | TDA8844 | PAL/SECAM/NTSC/SECAM-L | |
| | | TDA8843 | PAL/NTSC | |
| IC301 | 3 | LA7845 | VERTICAL DEFLECTION AMP | |
| IC501 | 4 | TDA6108 | RGB DRIVE AMP | |
| IC601 | 5 | TDA7297 | SOUND AMP(10W/CH) | |
| | | TDA7266S | SOUND AMP(5W/CH) | |
| IC701 | 6 | TDA9859 | AUDIO PROCESSOR | |
| IC801 | 7 | KA3S1265R | SMPS IC(12A) | |
| IC802 | 8 | PC123Y | PHOTO COUPLER | |
| IC803 | 9 | 78R05 | SWITCHING REGULATOR | |
| IC804 | 10 | KA7630 | SWITCHING REGULATOR(5,8V) | |
| IC901 | 11 | SPM171EE | MICOM | |
| IC902 | 12 | 24W16 | EEPROM | 16K |
| ICE01 | 13 | 4558 | EW DRIVE AMP | |
| ICN01 | 14 | TDA9814T | SIF DETECTOR(SECAM-L) | NICAM MODULE |
| ICN02 | 15 | TDA9874H | NICAM DEMODULATOR | |
| ICA01 | 16 | LA7567N | SIF DETECTOR | A2 STEREO MODULE |
| ICA02 | 17 | TDA9873H | A2 DEMODULATOR | |
| ICM01 | 18 | LA7566 | SIF & FM DETECTOR | MONO |
| ICS01 | 19 | TEA5114 | VIDEO SWITCH | RGB-S/W |

## 2-3 Semiconductor Base Diagrams

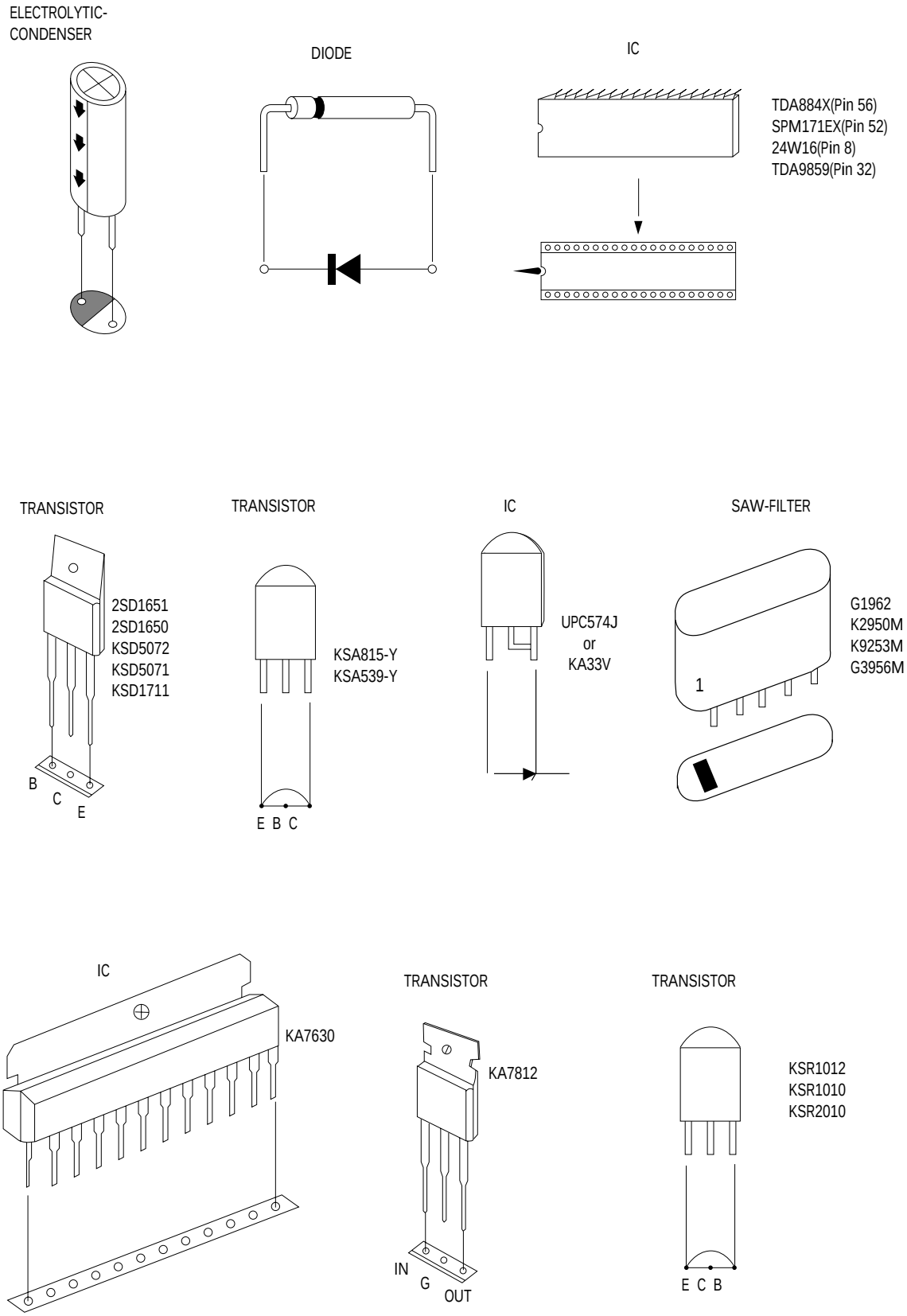
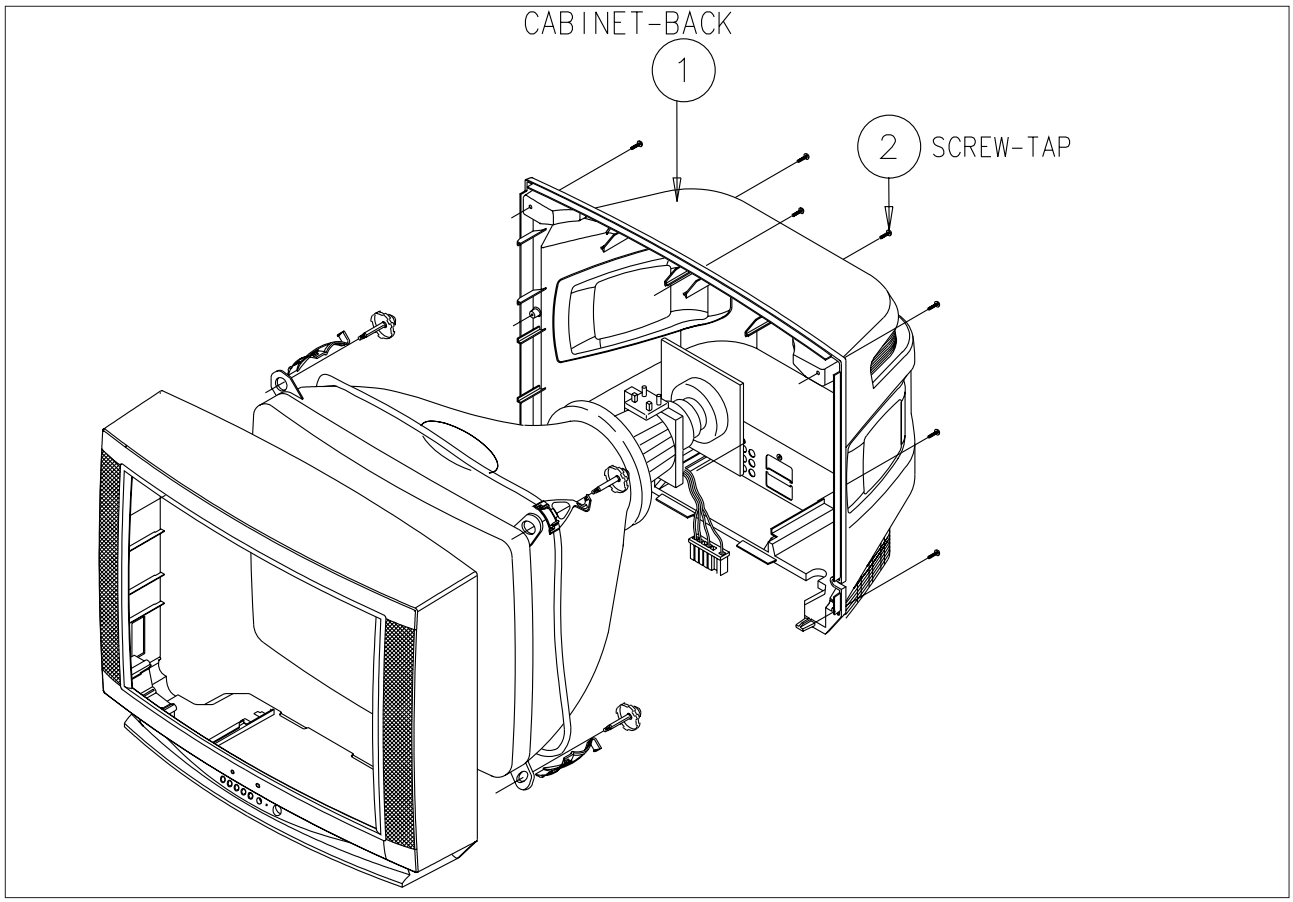



Fig. 2-1 Semiconductor Base Diagrams

# MEMO

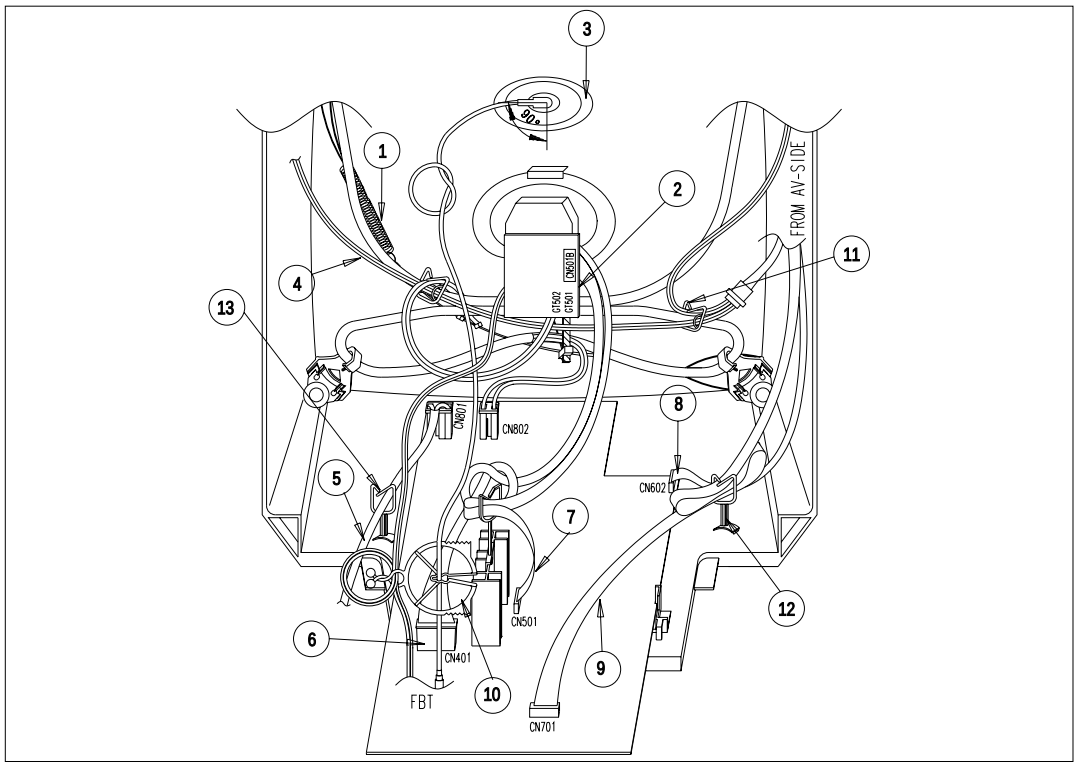
# 3. Disassembly and Reassembly

## 3-1 Back Cover Removal




1. After removing the 7 screws, pull the cabinet backwards.

## 3-2 Main Board Removal




1. Separate the TBC-wire 2P connector from GT501,GT502.

2. Separate the CRT Assembly from the CRT socket.

3. Remove the Anode Cap from the CRT.

4. Separate the D-Coil Connector from CN802.

5. Separate the AC cord from CN801.

6. Separate the DC connector from CN401.

7. Separate the CN501B 8P CRT connector from CN501.

8. Separate the CNA05 5P A/V side connector from CN602.

9. Separate the CNA01 8P CRT connector from CN701.

10. Separate the Focus Screen Wire from the FBT clamper.

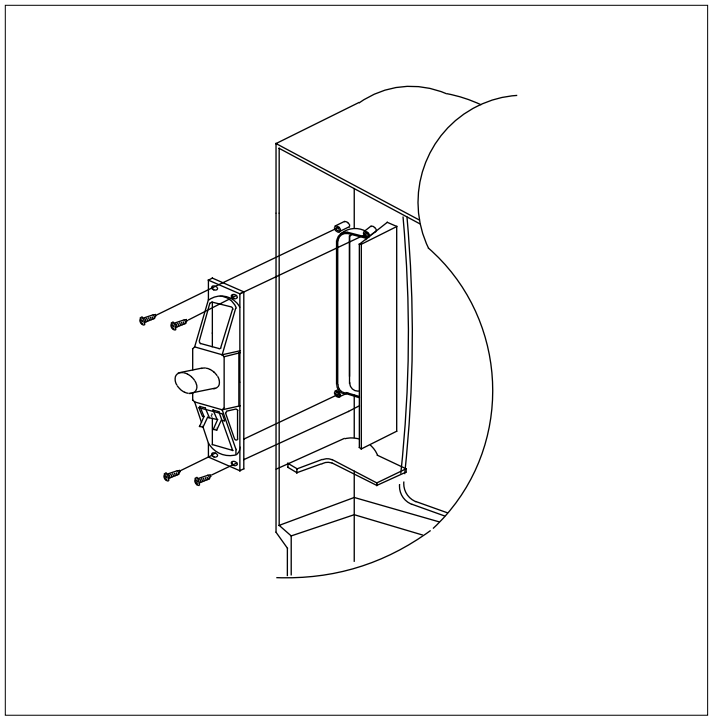
11. Separate the TBC wire 2P, speaker wires from the wire clamper.

12. Separate the CN701, CN602 connector from the wire clamper.

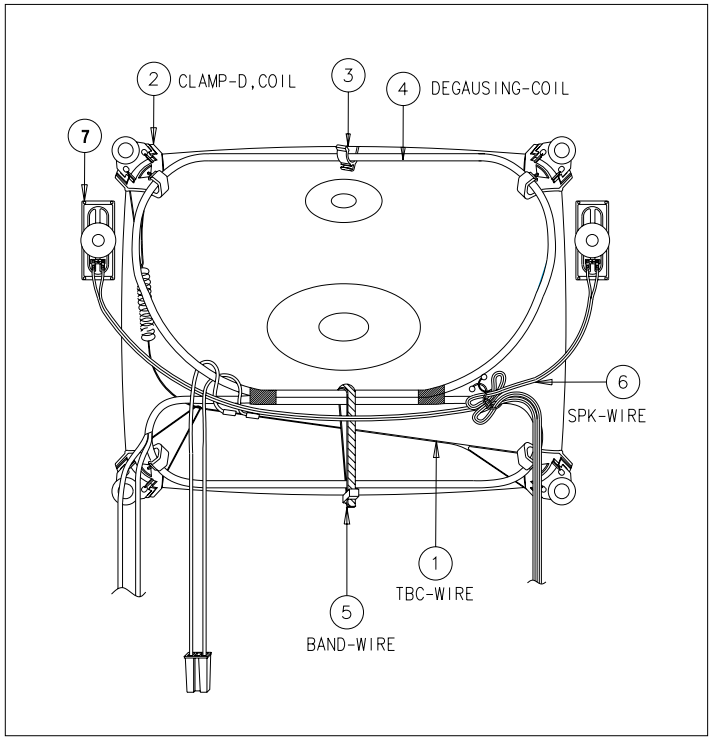
13. Separate the AC cord from the wire clamper.

14. Remove the main board by pulling it with both hands.

## 3-3 Speaker Removal



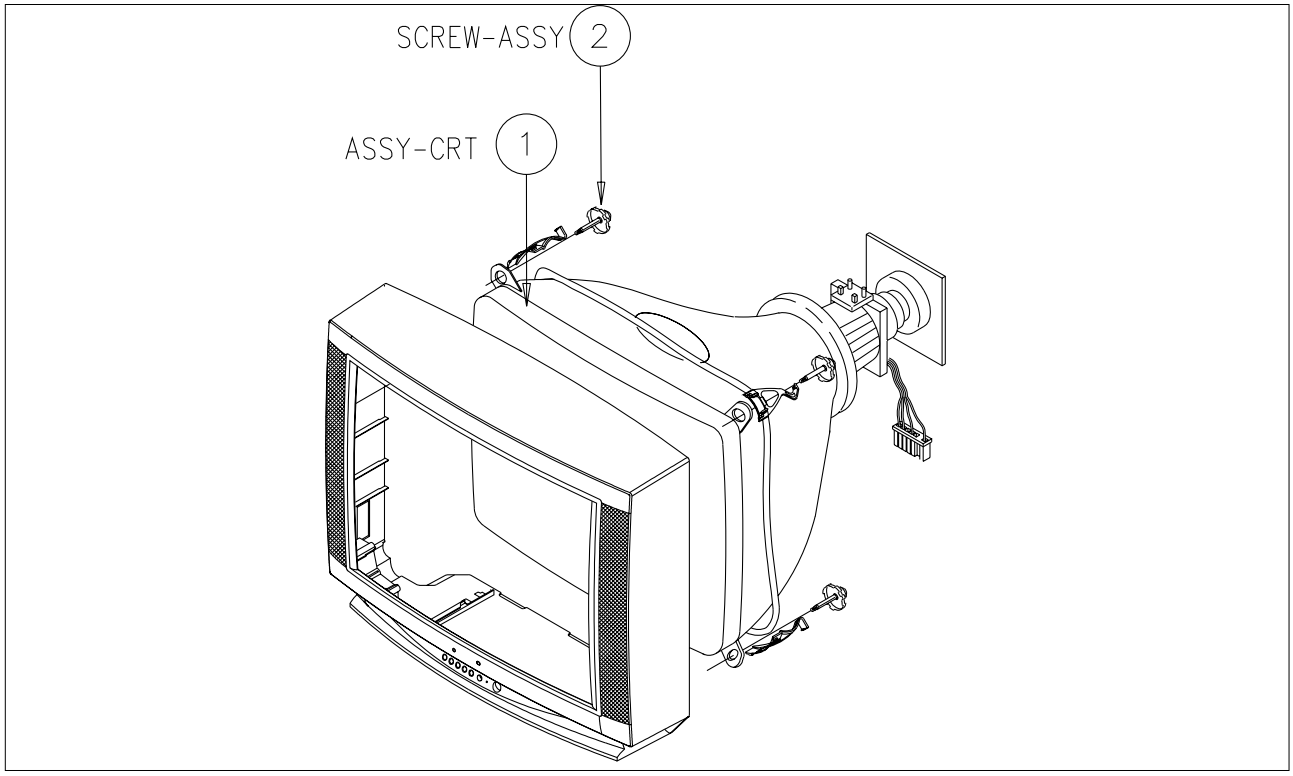
1. Remove the speaker by pressing the tension rib.




1. Separate the speaker wires from D-coil (located on the bottom to the right side).

2. Remove the screws.

## 3-4 CRT Removal




1. Remove the 4 nuts that mount the CRT to the front cabinet.
   Pull the CRT backwards.

2. Caution: Because of the high vacuum and large surface area of the picture tube, be careful while handling it: (1) Always lift the picture tube by grasping it firmly around the faceplate, (2) Never lift the tube by its neck. (3) Do not scratch the picture tube or apply excessive pressure. Fractures of the glass may cause an implosion.

# 4. Alignment and Adjustments

## 4-1 Preadjustment

### 4-1-1 Factory Mode

1. Do not attempt these adjustments in the Video Mode.

2. The Factory Mode adjustments are necessary when either the EEPROM (IC902) or the CRT is replaced.

3. Do not tamper with the "Adjustment" screen of the Factory Mode menu. This screen is intended only for factory use.

### 4-1-2 When EEPROM (IC902) Is Replaced

1. When IC902 is replaced all adjustment data revert to initial values. It is necessary to re-program this data.

2. After IC902 is replaced, warm up the TV for 10 seconds.

### 4-1-3 When CRT Is Replaced

1. Make the following adjustments AFTER setting up after setting up purity and convergence :

   White Balance
   Sub-Brightness, Sub-Contrast
   Vertical Center
   Vertical Size
   Horizontal Size
   Fail Safe (This adjustment must be the last step).

## 4-2 Factory/Service Mode

### 4-2-1 Procedure for the "Adjustment" Mode

1. This mode uses the standard remote control. The Service Mode is activated by entering the following remote-control sequence :

   (1) STAND-BY→ DISPLAY→ MENU→ MUTE →POWER ON.

2. The "SERVICE (FACTORY)" message will be displayed. The Service Mode has three components: Adjustment, Option and Reset.

3. Access the Adjustment Mode by pressing the "VOLUME" keys ( Up or Down). The adjustment parameters are listed in the accompanying table, and selected by pressing the CHANNEL keys (▲ ,▼).

4. Selection sequences for the PAL system:

   DOWN or UP key:

   AGC↔VCO↔SBT↔SCT↔SCR↔SC↔RG↔ BG↔CDL↔STT↔LCO↔VOL↔PSL↔PVS↔ PVA↔PHS↔PEW↔PEP↔PEC↔PET↔VSC↔ TSC↔SA↔QEW↔PCT↔PTT↔PHM↔PVP↔ PHP↔NSR↔PDL↔AGC.

5. The VOLUME keys increase or decrease the adjustment values (stored in the non-volatile memory) when Adjustment Mode is cancelled.

6. Cancel the Adjustment Mode by re-pressing the "HIDDEN" or "Power OFF/ON" keys.

7. After adjustments are completed, re-start the TV set.

## 4-2-2 Main Adjustment Parameters

| OSD | FUNCTION | RANGE |
|---|---|---|
| AGC | AUTO GAIN CONTROL | 0 - 63 |
| VCO | VOLTAGE CONTROLLED OSCILLATOR | 0 - 127 |
| SBT | SUB BRIGHTNESS | 0 - 23 |
| SCT | SUB CONTRAST | 0 - 23 |
| SCR | SUB COLOUR | 0 - 23 |
| SC | S-CORRECTION | 0 - 63 |
| RG | RED DRIVE GAIN | 0 - 63 |
| BG | BLUE DRIVE GAIN | 0 - 63 |
| CDL | CATHODE DRIVE LEVEL | 0 - 7 |
| STT | SUB TINT ( FOR NTSC ) | 0 - 7 |
| LCO | SECAM-L VOLTAGE CONTROLLED OSCILLATOR | 0 - 1 |
| VOL | VOLUME INITIAL LEVEL | 0 - 63 |
| PSL | PAL VERTICAL SLOPE | 0 - 63 |
| PVS | PAL VERTICAL SHIFT | 0 - 63 |
| PVA | PAL VERTICAL AMPLITUDE | 0 - 63 |
| PHS | PAL HORIZONTAL SHIFT | 0 - 63 |
| PEW | PAL E-W WIDTH | 0 - 63 |
| PEP | PAL E-W PALABOLA | 0 - 63 |
| PEC | PAL E-W CORNER | 0 - 63 |
| PET | PAL E-W TRAPEZIUM | 0 - 63 |
| VSC | VERTICAL SCROLL | 0 - 63 |
| TSC | TELETEXT SUB CONTRAST | 0 - 63 |
| SA | SEPARATION ADJUSTMENT (STEREO) | 0 - 15 |
| QEW | Q(12.8:9) MODEL E-W WIDTH | 0 - 7 |
| PCT | PIP CONTRAST | 0 - 15 |
| PTT | PIP TINT | 0 - 63 |
| PHM | PIP HORIZONTAL MOVE | 0 - 15 |
| PVP | PIP VERTICAL POSITION | 0 - 63 |
| PHP | PIP HORIZONTAL POSITION | 0 - 63 |
| NSR | NTSC SUB COLOUR | 0 - 23 |
| PDL | PAL DELAYTIME | 0 - 15 |

FACTORY MODE VALUE

| OSD | INITIAL | OSD | INITIAL | OSD | INITIAL |
|---|---|---|---|---|---|
| 2 (CH) | | LCO | 1 (FIXED) | TSC | 20(FIXED) |
| AGC | 10 | VOL | 25 | SA | 7 |
| VCO | 80(FIXED) | PSL | 31(FIXED) | QEW | 5 |
| SBT | 7 | PVS | 31 | PCT | 7(FIXED) |
| SCT | 16 | PVA | 31 | PTT | 31(FIXED) |
| SCR | 5(FIXED) | PHS | 40 | PHM | 8(FIXED) |
| SC | 11(FIXED) | PEW | 38 | PVP | 31(FIXED) |
| RG | 31 | PEP | 22 | PHP | 31(FIXED) |
| BG | 31 | PEC | 22 | NSR | 3 (FIXED) |
| CDL | 5 | PET | 30 | PDL | 0 (FIXED) |
| STT | 10(FIXED) | VSC | 31(FIXED) | | |

### 4-2-3 AGING Mode (Reference Only)

This pattern is used for pre-heating the CRT during manufacturing--it is accessed in the factory by twice pressing the “FACTORY “ key.

Even if the TV power is cut off, the Aging Mode is not cancelled, The AGING mode is cancelled by repressing the “HIDDEN” or any key on the front pannel.

## 4-2-4 Option Byte Table

Option Byte

1.ZOOM MODE : NORMAL/ZOOM/16:9
2.AUDIO MODE : NICAM STEREO
3.ONE CHIP : TDA8844
4.LED OPTION : NORMAL
5.LANGUAGE : WEST
ENG/GER/FRA/DUT/SPA/ITA/SWE
6.SYSTEM: CX
7.ATS OPTION : ON
8.FIELD POL : FIELD POS

| OPTION | OSD | NOTE |
|---|---|---|
| ZOOM MODE | PLU/NOR/ZOOM/16:9 | 12.8 : 9 CRT USED(30",22") |
| | NORMAL/ZOOM/16:9 | NORMAL CRT USED |
| | NORMAL/ZOOM | |
| | PLUS/NORMAL | 12.8 : 9 CRT USED(26") |
| AUDIO MODE | NICAM STEREO | NICAM MODULE USED |
| | STEREO | A2 MODULE USED |
| | LINE STEREO | MONO MODULE USED<br>(LINE STEREO MODEL ) |
| | MONO | MONO MODULE USED<br>(MONO MODEL ) |
| ONECHIP | TDA8844 | CRT(MORE THAN 22-INCH)USED |
| | TDA8842 | CRT(MORE THAN 21-INCH)USED |
| LED OPTION | NORMAL | DEFAULT |
| | POLAND | POLAND MODEL ONLY |
| LANGUAGE | WEST<br>ENG/GER/FRA/DUT/SPA/<br>ITA/SWE | WEST EUROPE MARKET<br>ENGLISH/GERMANY/FRANCE/<br>NETHERLANDS/SPAIN/ITALY/SWEDEN |
| | EAST<br>ENG/CZE/CRO/RUM/HUN/<br>POL | EAST EUROPE MARKET<br>ENGLISH/CZECH/CROATIA/ROMANIA/<br>HUNGARY/POLAND |
| SYSTEM | CF | SECAM-L/L', PAL/SECAM-B/G |
| | CI | PAL - I ( UHF BAND ONLY) |
| | CK | PAL/SECAM - B/G,D/K |
| | CX | PAL/SECAM -B/G |
| | CB | PAL -B/G |
| ATS OPTION | ON | ATM FUNCTION USED |
| | OFF | ATM FUNCTION NOT USED |
| FIELD POL | FIELD POS | PHILIPS CRT USED |
| | FIELD NEG | OTHER CRT USED |

Alignment and Adjustments

### 4-2-5 RESET

The Reset Mode is used during factory inspection.
Function Reset:

| | | |
|---|---|---|
| 1. | Channels | Add/Erase |
| 2. | Language | Last condition |
| 3. | Station name | Clear |

## 4-3 Other Adjustments

### 4-3-1 General

1. Usually, a color TV needs only slight touch-up adjustment upon installation. Check the basic characteristics such as height, horizontal and vertical sync and focus.

2. The picture should have good black and white details. There should be no objectionable color shading; if color shading is present, perform the purity and convergence adjustments described below.

3. Use the specified test equipment or its equivalent.

4. Correct impedance matching is essential.

5. Avoid overload. Excessive signal from a sweep generator might overload the front-end of the TV. When inserting signal markers, do not allow the marker generator to distort test results.

6. Connect the TV only to an AC power source with voltage and frequency as specified on the backcover nameplate.

7. Do not attempt to connect or disconnect any wires while the TV is turned on. Make sure that the power cord is disconnected before replacing any parts.

8. To protect against shock hazard, use an isolation transformer.

### 4-3-2 Automatic Degaussing

A degaussing coil is mounted around the picture tube, so that external degaussing after moving the TV should be unnecessary. But the receiver must be properly degaussed upon installation.

The degaussing coil operates for about 1 second after the power is switched ON. If the set has been moved or turned in a different direction, disconnect its AC power for at least 30 minutes.

If the chassis or parts of the cabinet become magnetized, poor color purity will result. If this happens, use an external degaussing coil. Slowly move the degaussing coil around the faceplate of the picture tube and the sides and front of the receiver. Slowly withdraw the coil to a distance of about 6 feet before removing power.

Alignment and Adjustments

### 4-3-3 High Voltage Check

CAUTION: There is no high voltage adjustment on this chassis. The B+ power supply must be set to +155 volts (Full color bar input and normal picture level).

1. Connect a digital voltmeter to the second anode of the picture tube.
2. Turn on the TV. Set the Brightness and Contrast controls to minimum (zero beam current).
3. The high voltage should not exceed 33KV.
4. Adjust the Brightness and contrast controls to both extremes. Ensure that the high voltage does not exceed 33KV under any conditions.

### 4-3-4 FOCUS Adjustment

1. Input a black and white signal.
2. Adjust the tuning control for the clearest picture.
3. Adjust the FOCUS control for well defined scanning lines in the center area of the screen.

### 4-3-5 Screen Adjustment

1. Connect CRT socket pin GK, BK, RK to an oscilloscope probe.
2. Input a gray scale pattern. (Use a pattern generator, PM5518)
3. Use the Picture mode for the STANDARD picture.
4. Adjust the Screen VR (on the FBT) so that the voltage on the oscilloscope becomes 140±2.5V (See Fig. 4-1).

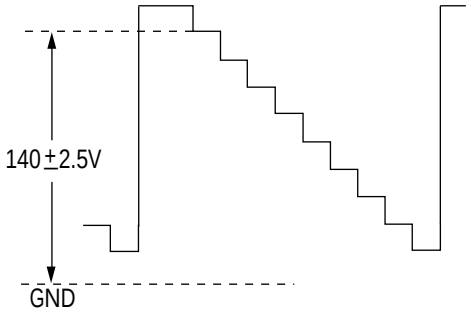



Fig. 4-1

### 4-3-6 Purity Adjustment

1. Warm up the receiver for at least 20 minutes.
2. Plug in the CRT deflection yoke and tighten the clamp screw.
3. Plug the convergence yoke into the CRT and set in as shown in Fig. 4-2.
4. Input a black and white signal.
5. Fully demagnetize the receiver by applying an external degaussing coil.
6. Turn the CONTRAST and BRIGHTNESS controls to maximum.
7. Loosen the clamp screw holding the yoke. Slide the yoke backward or forward to provide vertical green belt. (Fig. 4-3).
8. Tighten the convergence yoke.
9. Slowly move the deflection yoke forward, and adjust for the best overall green screen.
10. Temporarily tighten the deflection yoke.
11. Produce blue and red rasters by adjusting the low-light controls. Check for good purity in each field.
12. Tighten the deflection yoke.

Alignment and Adjustments

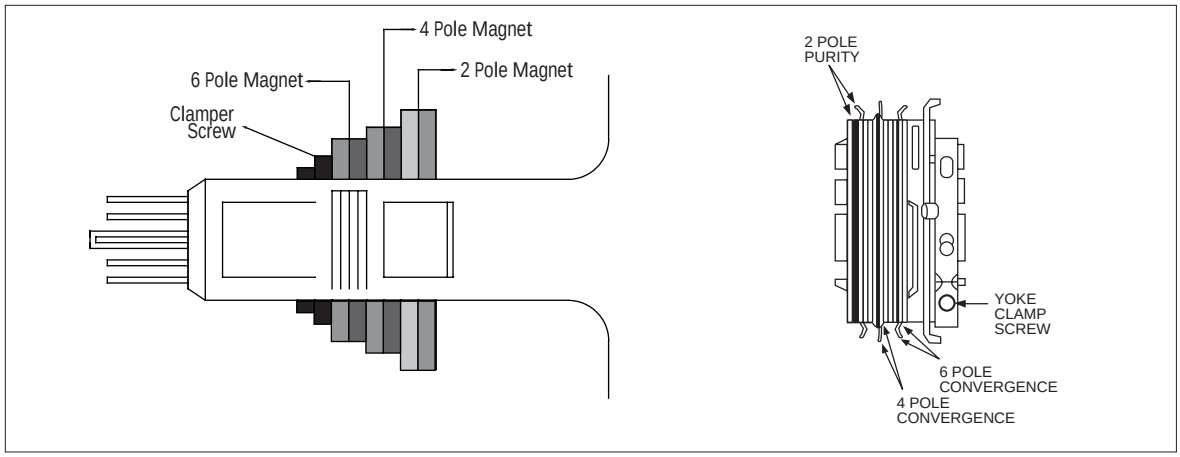



Fig. 4-2 Convergence Magnet Assembly

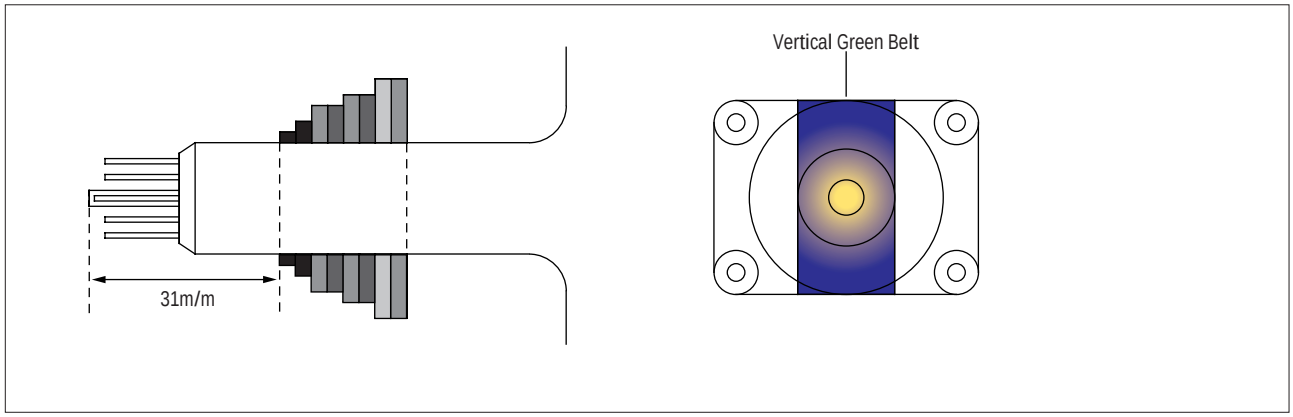



Fig. 4-3 Center Convergence Adjustment

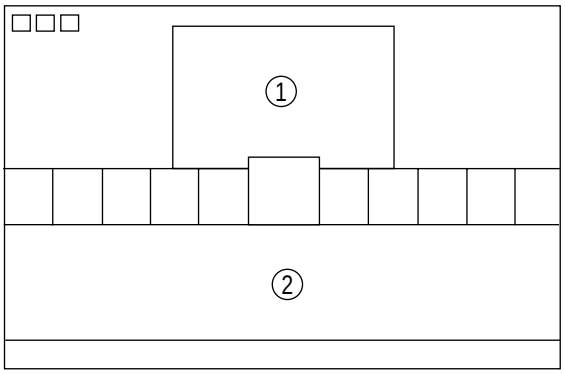



Fig. 4-4

### 4-3-7 White Balance Adjustment

(a) Set up

1. Warm up the TV for at least 30 minutes in the White Pattern.
2. Input a Toshiba pattern.

(b) High-Light Adjustment

Set SCT to 40 ± 5 fL in the Factory Service Mode with using CA100. (See Fig. 4-4 ①)

(c) Low-Light Adjustment

Set SBT to 1.5 ± 0.2 fL in the Factory Service Mode with using CA100. (See Fig. 4-4 ②)

Alignment and Adjustments

### 4-3-8 Center Convergence Adjustment

1. Warm up the receiver for at least 20 minutes.
2. Adjust the two tabs of the 4 pole magnets to change the angle between them. Superimpose the red and blue vertical lines in the center area of the screen.
3. Adjust the Brightness and Contrast controls for a well defined picture.
4. Adjust the two-tab pairs of the 4 pole magnets, and change the angle between them. Superimpose the red and the blue vertical lines in the center area of the screen.
5. Turn the both tabs at the same time, keeping the angle constant, and superimpose the red and blue horizontal line in the center of the screen.
6. Adjust the two-tab pairs of the 6-pole magnets to superimpose the red and blue line onto the green. (Changing the angle affects the vertical lines, and rotating both magnets affects the horizontal lines.)
7. Repeat adjustments 2~6, if necessary.
8. Since the 4-pole magnets and 6-pole magnets interact, the dot movement is complex (Fig. 4-5).

Fig. 4-5 Center Convergence Adjustment

### 4-3-9 RF AGC Adjustment

1. Tune to the strongest local station.

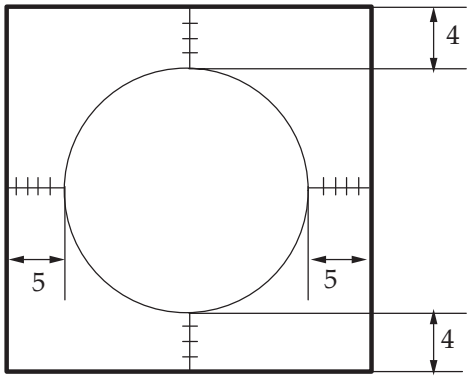
2. Enter the Factory Service Mode to make adjustments.

3. Adjust the AGC control untill noise(snow) disappears from the screen.

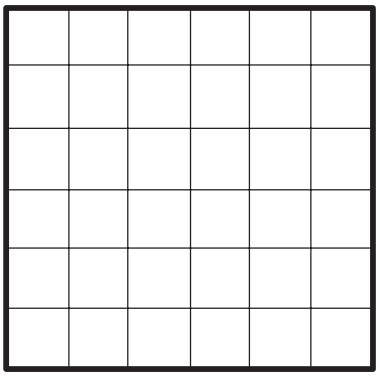
Alignment and Adjustments

## 4-3-10 Geometry Adjustment

1. Input a lion head pattern.
2. Adjust PVS so that the picture is vertically centered.
3. Adjust with PVA so that the top and bottom margins of the picture are 4.
4. Adjust PHS so that the picture is horizontally centered.
5. Adjust with PEW so that the left and right margins of the picture are 5.

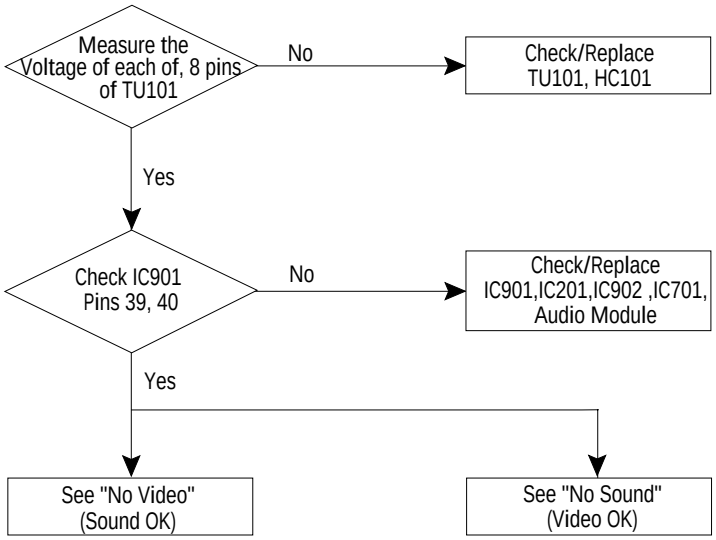



6. Input a crosshatch pattern.
7. Adjust PEP, PEC , PET for vertical linearity.

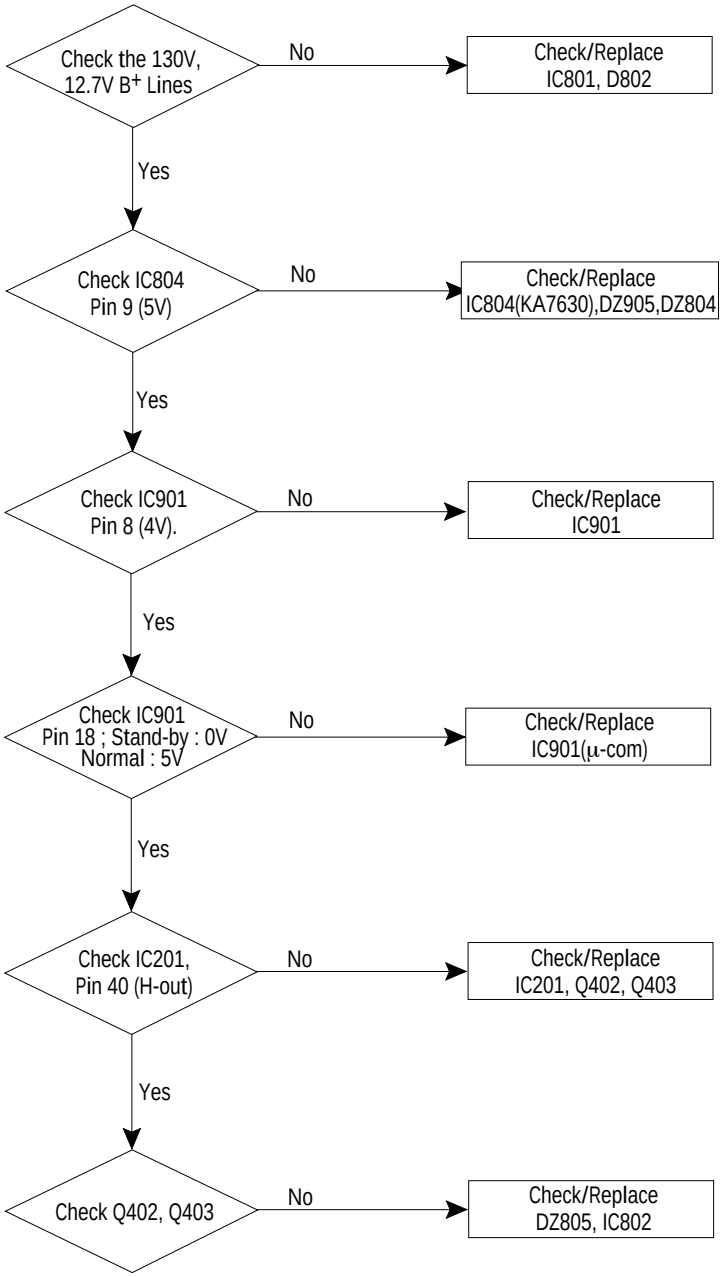


# 5. Troubleshooting

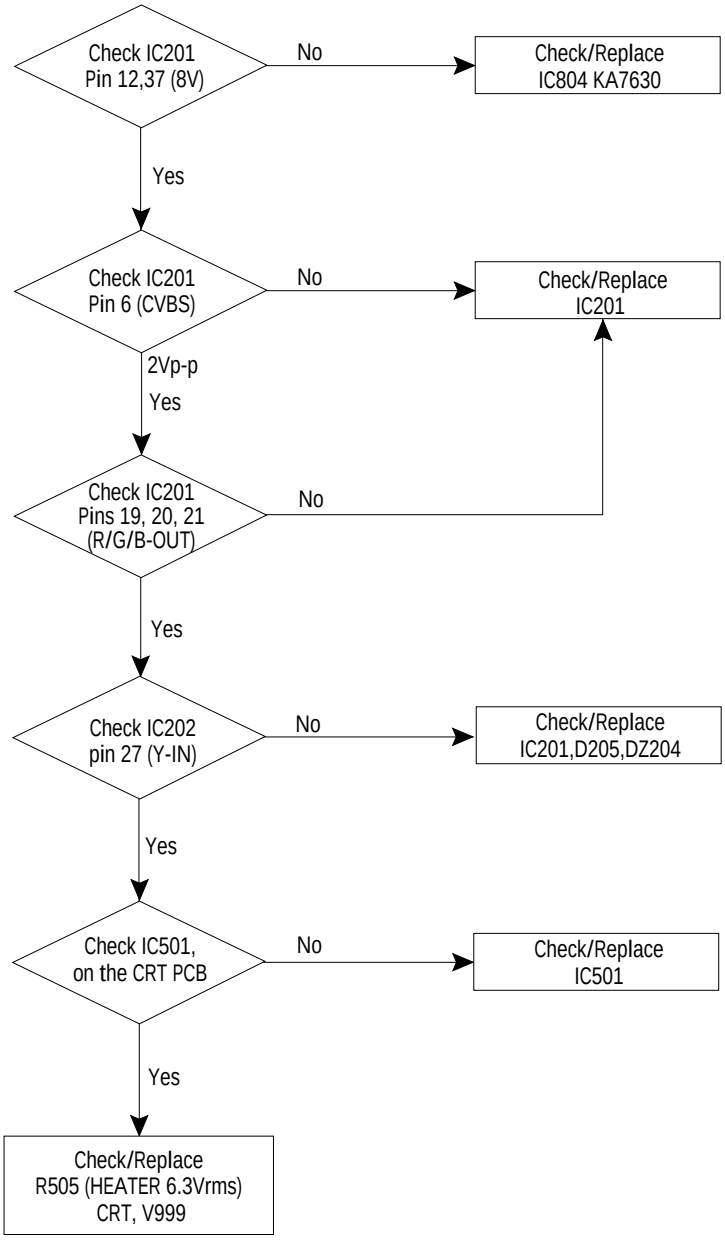
## 5-1 No Video (Raster On, No Sound)



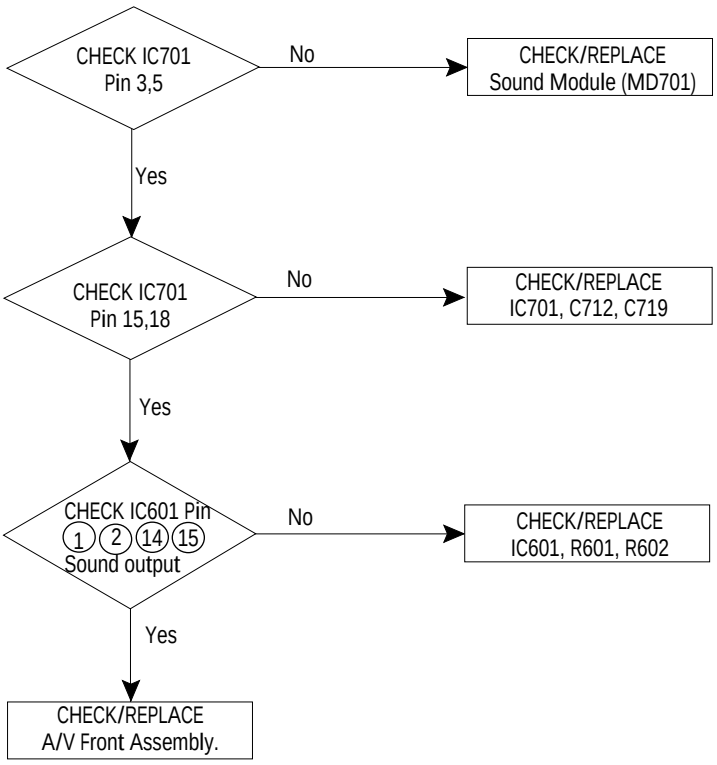
## 5-2 No Power


Check the 130V, 12.7V B+ Lines
No
Check/Replace IC801, D802
Yes
Check IC804 Pin 9 (5V)
No
Check/Replace IC804(KA7630),DZ905,DZ804
Yes
Check IC901 Pin 8 (4V).
No
Check/Replace IC901
Yes
Check IC901 Pin 18 ; Stand-by : 0V Normal : 5V
No
Check/Replace IC901(μ-com)
Yes
Check IC201, Pin 40 (H-out)
No
Check/Replace IC201, Q402, Q403
Yes
Check Q402, Q403
No
Check/Replace DZ805, IC802

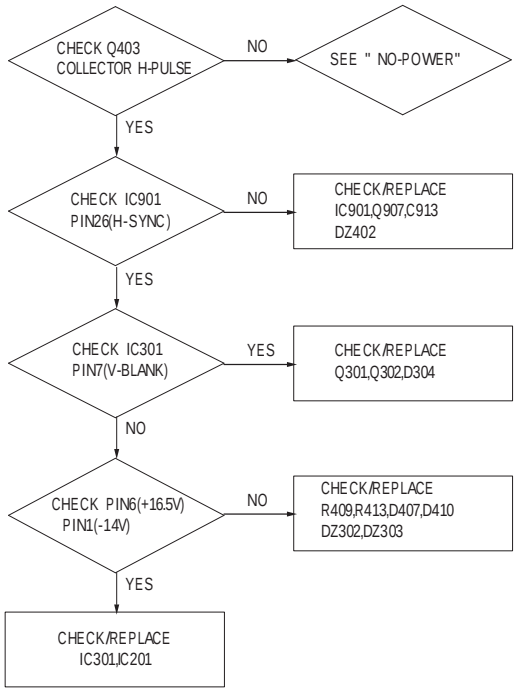
## 5-3 No Video (Sound OK)



## 5-4 No Sound (Video OK)




## 5-5 Power OFF/ON (Repeatedly)



## 5-6 SMPS (Power Supply) Does Not Function

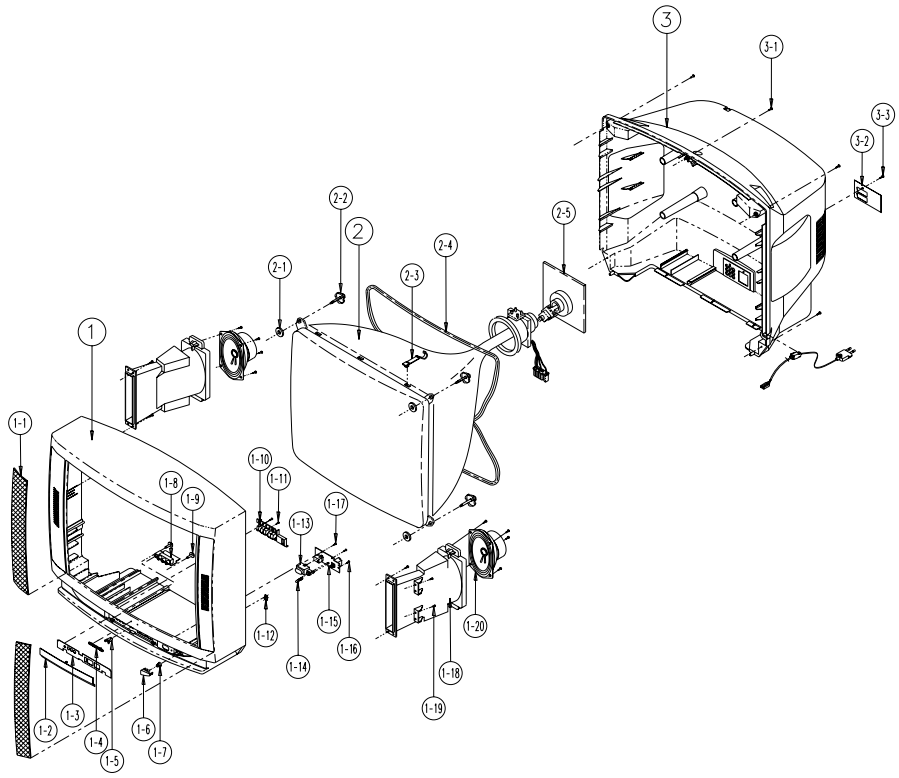
(1) When F802 is open:
Check/Replace F802 , IC801 , D802.

(2) When F802 is okay, but SMPS does not function:
Check/Replace DZ801 , DZ808 , IC802 , DZ805.

(3) Others: See "5. Troubleshooting"

# 6. Exploded View & Parts List

## 6-1 CK6202X3X/BWT




| No | Code No | Description | Specification | Q'ty | Remark |
|---|---|---|---|---|---|
| 1 | AA91-00067A | ASSY-CABINET,FRONT | -,CK6202SXR,S1000 MLB TVI BWT,HB | 1 | |
| | AA64-31156H | CABINET-FRONT- | ,CK6202SXR,S1000 MLB BWT TVI,HIPS,HB | 1 | |
| 1-1 | AA63-50064A | GRILLE-SHEET | -,6202,S1300,PS,T0.4,-,- | 2 | |
| 1-2 | AA64-50111A | DOOR-CONTROL | -,62.7202,S1000,HIPS,HB,BLK,-, | 1 | |
| 1-3 | AA64-60274D | INLAY-CONTROL | 6202,MW,PS,T0.3,BLK,-,- | 1 | |
| 1-4 | AA64-70011B | BADGE-BRAND | AL,SS R2000 25,SILVER,L60,-,-, | 1 | |
| 1-5 | AA61-30001A | LATCH-DOOR | -,-,-,KIFUCO LA701,- | 1 | |
| 1-6 | AA64-10166A | KNOB-POWER,M | -,62.7202,-,ABS,HB,BLK | 1 | |
| 1-7 | AA61-60005K | SPRING-CS | -,SUS304,0.6,OD12.2,H13,N4,-,- | 1 | |
| 1-8 | AA95-00004A | ASSY-PCB,A/V SIDE | -,566B~569B,S51A,PAL,-,- | 1 | |
| 1-9 | AA60-10002A | SCREW-TAPPING | RH,+,M4,L12,ZPC(YEL),-,OD14 | 2 | |
| 1-10 | AA64-10058A | KNOB-CONTROL | -,62.7202,-,ABS,HB,BLK | 1 | |
| 1-11 | 6002-000514 | SCREW-TAPPING | RH,+,2,M4,L15,ZPC(BLK),SWRCH18 | 2 | |
| 1-12 | AA64-40238A | INDICATOR-LED | -,62.7202,-,ACRYL,-,-,- | 1 | |
| 1-13 | AA64-40060A | WINDOW-REMOCON | -,62.7202,LG41338,ABS,HB,-,- | 1 | |
| 1-14 | 0601-000198 | LED | ROUND,RED/GRN,5.0mm,630/565nm | 1 | |
| 1-15 | AA95-30002B | ASSY-PCB,CONTROL | -,SCT12B,-,- | 1 | |
| 1-16 | 6001-000677 | SCREW-MACHINE | RH,+,M3,L6,ZPC(YEL),SM20C,- | 1 | |
| 1-17 | 6001-000677 | SCREW-MACHIN | ERH,+,M3,L6,ZPC(YEL),SM20C,- | 2 | |
| 1-18 | | ASSY-HOLDER,SPK OPTION | | | |
| 1-19 | 6002-000522 | SCREW-TAPPING | TH,+,2,M4,L15,ZPC(BLK),SWRCH18 | 8 | |
| 1-20 | AA91-60003A | ASSY-HOLDER,SPK | -,PP,-,-,8ohm 10W,CT2199 | 1 | |
| 2 | AA03-10023R | CRT-COLOR | -,A59KPR84X01(DB),+500mG,25,1 | 1 | |
| 2-1 | AA63-60004P | SPACER-GUM,CRT | NTR RUBBER,T2,GRY,-,-,- | 4 | |
| 2-2 | AA60-10050Q | SCREW-ASSY | WC,HH,+,M5,L26.5,SWRCH18A,ZPC( | 4 | |
| 2-3 | AA65-30113A | CLAMP-D,COIL | NYLON 66,V2,BLK,TVI 25~29,-,- | 4 | |
| 2-4 | AA27-20004G | COIL-DEGAUSSING | -,25,16.9ohm,35T,L2600,E | 1 | |
| 2-5 | 3704-001105 | SOCKET-CRT | 11P,20PI,26.5PI,NI,- | 1 | |
| 3 | AA64-30641D | CABINET-BACK | -,6202,-,HIPS,V2,BLK,-,- | 1 | |
| 3-1 | AA60-10050T | SCREW-TAPPING | RH,+,2S,M4,L20,ZPC(BLK),SWRCH1 | 7 | |
| 3-2 | AA64-60052C | INLAY-BACK | -,S51A SCART(2),PS,T0.5,BLK,-,- | 1 | |
| 3-3 | 6002-000512 | SCREW-TAPPING | RH,+,2,M4,L12,ZPC(BLK),SWRCH18 | 1 | |

# 7. Electric Parts List

## 7-1 CK6202X3S/NWT (CK6202X3X AND CK6202X3S Dissimilar Parts)

| Loc. No. | Code No. | Description ; Specification | Remark |
|---|---|---|---|
| | | **ASSY-PCB,MAIN(OPT)** | |
| | | BUYER : SRSC | |
| * | AA94-00485A | ASSY-PCB,MAIN(OPT);CK6202X3S/NWT,S51A,N-RUSSIA,- | |
| | | **ASSY-PCB,A/V FRONT** | |
| * | AA95-00031A | ASSY-PCB,A/V FRONT;DP,22,77,02,3399,S51A,-,-,- | |
| | | **ASSY-PCB,CONTROL** | |
| * | AA95-00113A | ASSY-PCB,CONTROL;DP,S51A,02 | |
| | | **ASSY-CRT** | |
| ⚠ | AA03-10016N | CRT-COLOR;-,A59KPR84X01(DB),+380mG,25,1 | |

| Loc. No. | Code No. | Description ; Specification | Remark |
|---|---|---|---|
| | | **ASSY-ACCESSORY** | |
| | AA68-00044A | MANUAL-USERS;S51A,N-RUS,-,B5,W/P100(G),- | |
| | | **ASSY-CABINET;6202,CK6202X3S/NWT** | |
| * | AA91-10287H | ASSY-CABINET,FRONT;DP,CK6202SXR,S1000 MLB NWT TVI | |
| | AA64-31156G | CABINET-FRONT;-,CK6202SXR,S1000 MLB NWT TVI,HIPS,H | |
| CB+21 | 6003-001019 | SCREW-TAPTITE;RH,+,B,M4,L12,ZPC(BLK),SWRCH18 | |
| CB+CF | 6003-001025 | SCREW-TAPTITE;RH,+,B,M4,L20,ZPC(BLK),SWRCH18 | |
| PA+CF | 6003-001024 | SCREW-TAPTITE;RWH,+,B,M4,L12,ZPC(YEL),SWRCH1 | |
| PC+CF | 6003-001026 | SCREW-TAPTITE;RH,+,B,M4,L15,ZPC(BLK),SWRCH18 | |

## 7-2 CK6202X3X/BWT Parts List

| Loc. No. | Code No. | Description ; Specification | Remark |
|---|---|---|---|
| | | **ASSY-PCB,MAIN(OPT)** | |
| | | BUYER : SRSC | |
| * | AA94-00488A | ASSY-PCB,MAIN(OPT);CK6202X3X/BWT,S51A,CIS,- | |
| C102 | 2401-002594 | C-AL;220uF,20%,16V,GP,TP,8x11.5,5 | |
| C103 | 2202-002037 | C-CERAMIC,MLC-AXIAL;100nF,80-20%,50V,Y5V,TP,2.2x3. | |
| C104 | 2202-002037 | C-CERAMIC,MLC-AXIAL;100nF,80-20%,50V,Y5V,TP,2.2x3. | |
| C105 | 2202-002037 | C-CERAMIC,MLC-AXIAL;100nF,80-20%,50V,Y5V,TP,2.2x3. | |
| C106 | 2401-001082 | C-AL;330nF,20%,50V,GP,TP,5x11,5 | |
| C107 | 2401-000914 | C-AL;22uF,20%,16V,GP,TP,5x11,5 | |
| C109 | 2202-000796 | C-CERAMIC,MLC-AXIAL;1NF,10%,50V,Y5P,TP,3.5X1.9MM,- | |
| C207 | 2401-001026 | C-AL;3.3UF,20%,50V,GP,TP,5X11,5 | |
| C210 | 2306-000122 | C-FILM,MPPF;100nF,5%,50V,TP,7.3x4.0x5.0mm, | |
| C211 | 2401-002619 | C-AL;47uF,20%,25V,GP,TP,5x11,5 | |
| C213 | 2301-000224 | C-FILM,PEF;22nF,5%,50V,TP,7.4x3.9x13mm,5m | |
| C214 | 2401-000660 | C-AL;2.2uF,20%,50V,GP,TP,5x11,5 | |
| C215 | 2305-000412 | C-FILM,MPEF;470nF,5%,63V,TP,-,5mm | |
| C216 | 2401-001840 | C-AL;100uF,20%,16V,GP,TP,6.3x11,5 | |
| C217 | 2305-000665 | C-FILM,MPEF;100nF,5%,63V,TP,7.5x4.0x5.0mm, | |
| C218 | 2305-000411 | C-FILM,MPEF;470nF,5%,50V,TP,7.3x4.8x5.5mm, | |
| C219 | 2401-002144 | C-AL;47uF,20%,16V,GP,TP,5x11,5 | |
| C220 | 2401-000302 | C-AL;100uF,20%,25V,GP,TP,6.3x11,5 | |
| C221 | 2305-000289 | C-FILM,MPEF;220nF,5%,63V,TP,-,5mm | |
| C222 | 2305-000412 | C-FILM,MPEF;470nF,5%,63V,TP,-,5mm | |
| C223 | 2202-002037 | C-CERAMIC,MLC-AXIAL;100nF,80-20%,50V,Y5V,TP,2.2x3. | |
| C224 | 2202-002037 | C-CERAMIC,MLC-AXIAL;100nF,80-20%,50V,Y5V,TP,2.2x3. | |
| C225 | 2202-002037 | C-CERAMIC,MLC-AXIAL;100nF,80-20%,50V,Y5V,TP,2.2x3. | |
| C226 | 2401-000480 | C-AL;10uF,20%,50V,GP,TP,5x11,5 | |
| C227 | 2201-000986 | C-CERAMIC,DISC;12pF,5%,50V,NPO,TP,5x3mm,2.5mm | |
| C228 | 2201-000273 | C-CERAMIC,DISC;18pF,5%,50V,CH,TP,5x3mm,5 | |
| C229 | 2301-000356 | C-FILM,PEF;47nF,5%,50V,TP,7.5x4.0x6.5,5mm | |
| C230 | 2301-000192 | C-FILM,PEF;1nF,5%,50V,TP,5.3x10mm,5mm | |
| C231 | 2202-000183 | C-CERAMIC,MLC-AXIAL;2.2NF,20%,16V,Y5R,TP,3.5X1.9MM, | |
| C232 | 2202-000796 | C-CERAMIC,MLC-AXIAL;1NF,10%,50V,Y5P,TP,3.5X1.9MM,- | |
| C233 | 2309-000138 | C-FILM,PE-PPF;100nF,5%,50V,TP,20x16x8.5,7.5m | |
| C234 | 2305-000289 | C-FILM,MPEF;220nF,5%,63V,TP,-,5mm | |
| C235 | 2202-000849 | C-CERAMIC,MLC-AXIAL;18pF,5%,50V,CH,TP,3.5x1.9,- | |
| C236 | 2202-002037 | C-CERAMIC,MLC-AXIAL;100nF,80-20%,50V,Y5V,TP,2.2x3. | |
| C237 | 2305-000665 | C-FILM,MPEF;100nF,5%,63V,TP,7.5x4.0x5.0mm, | |
| C238 | 2301-000383 | C-FILM,PEF;10nF,5%,50V,TP,6x7x3.2mm,5mm | |
| C239 | 2301-000445 | C-FILM,PEF;4.7nF,5%,50V,TP,5.5x7x3mm,5mm | |
| C240 | 2401-001840 | C-AL;100uF,20%,16V,GP,TP,6.3x11,5 | |
| C241 | 2401-000603 | C-AL;1uF,20%,50V,GP,TP,5x11,5 | |
| C242 | 2202-000183 | C-CERAMIC,MLC-AXIAL;2.2NF,20%,16V,Y5R,TP,3.5X1.9MM, | |
| C243 | 2401-000603 | C-AL;1uF,20%,50V,GP,TP,5x11,5 | |
| C244 | 2301-000224 | C-FILM,PEF;22nF,5%,50V,TP,7.4x3.9x13mm,5m | |
| C245 | 2305-000665 | C-FILM,MPEF;100nF,5%,63V,TP,7.5x4.0x5.0mm, | |
| C301 | 2301-000254 | C-FILM,PEF;39nF,5%,50V,TP,7.5x3.5x6.5mm,5 | |
| C302 | 2401-000360 | C-AL;100uF,20%,50V,GP,TP,8x11.5,5 | |
| C303 | 2201-000259 | C-CERAMIC,DISC;180pF,10%,500V,Y5P,TP,6x4,5 | |
| C304 | 2305-000285 | C-FILM,MPEF;220NF,5%,100V,TP,10.5X5.5X15MM,5 | |
| C305 | 2305-001011 | C-FILM,MPEF;22nF,5%,100V,TP,3.5x12.5x7.5mm | |
| C306 | 2305-000149 | C-FILM,MPEF;100nF,5%,100V,TP,12x12.5x6.5,5 | |
| C307 | 2401-000360 | C-AL;100uF,20%,50V,GP,TP,8x11.5,5 | |
| C308 | 2401-000480 | C-AL;10uF,20%,50V,GP,TP,5x11,5 | |
| C309 | 2401-001840 | C-AL;100uF,20%,16V,GP,TP,6.3x11,5 | |
| C403 | 2401-000901 | C-AL;22uF,20%,160V,GP,TP,10x20,5 | |
| C404 | 2201-000291 | C-CERAMIC,DISC;1nF,10%,500V,Y5P,TP,8.5x5MM,5 | |
| C405 | 2401-002268 | C-AL;2.2uF,20%,250V,LZ,TP,8X11,5 | |
| C406 | 2306-000272 | C-FILM,MPPF;820nF,5%,400V,BK,29x25.5x18.5, | |
| C407 | 2201-000984 | C-CERAMIC,DISC;680pF,10%,2KV,Y5P,TP,11x6,7.5m | |
| C408 | 2305-000382 | C-FILM,MPEF;4.7nF,5%,400V,TP,-,5mm | |
| C409 | 2201-000551 | C-CERAMIC,DISC;470pF,10%,1KV,Y5P,TP,8x5,5 | |
| C410 | 2401-001397 | C-AL;470uF,20%,25V,GP,TP,10x16,5 | |
| C411 | 2305-000178 | C-FILM,MPEF;10nF,5%,100V,TP,-,5mm | |
| C412 | 2201-000599 | C-CERAMIC,DISC;560pF,10%,500V,Y5P,TP,7x4,5 | |
| C413 | 2401-000302 | C-AL;100uF,20%,25V,GP,TP,6.3x11,5 | |

| Loc. No. | Code No. | Description ; Specification | Remark |
|---|---|---|---|
| C414 | 2306-000329 | C-FILM,MPPF;7nF,3%,1.6KV,TP,28.5x18.5x11mm | |
| C415 | 2306-000322 | C-FILM,MPPF;12nF,5%,1.6KV,TP,29x20.5x13,20 | |
| C416 | 2301-001258 | C-FILM,PPF;39nF,5%,400V,TP,19.5x9x15,7.5 | |
| C417 | 2306-000102 | C-FILM,MPPF;1.2uF,5%,250V,TP,29*31*14.5,20 | |
| C418 | 2201-000556 | C-CERAMIC,DISC;470pF,10%,500V,Y5P,TP,7x4,5 | |
| C419 | 2401-001397 | C-AL;470uF,20%,25V,GP,TP,10x16,5 | |
| C421 | 2401-002619 | C-AL;47uF,20%,25V,GP,TP,5x11,5 | |
| C422 | 2306-000122 | C-FILM,MPPF;100nF,5%,50V,TP,7.3x4.0x5.0mm, | |
| C423 | 2201-000556 | C-CERAMIC,DISC;470pF,10%,500V,Y5P,TP,7x4,5 | |
| C424 | 2401-001527 | C-AL;47uF,20%,250V,HR,TP,13x25mm,5m | |
| C425 | 2305-000154 | C-FILM,MPEF;100nF,5%,400V,TP,21.5x6.5x11.5 | |
| C427 | 2201-002041 | C-CERAMIC,DISC;820pF,10%,2KV,Y5P,TP,12x6,7.5m | |
| C504 | 2202-000862 | C-CERAMIC,MLC-AXIAL;390pF,10%,50V,Y5P,TP,3.5x1.9,- | |
| C506 | 2301-000213 | C-FILM,PEF;220nF,5%,250V,TP,21.5x11,7.5 | |
| C510 | 2401-000430 | C-AL;10uF,20%,250V,GP,TP,10x16mm,5m | |
| C520 | 2401-001232 | C-AL;4.7uF,20%,250V,GP,TP,10x12.5,5 | |
| C530 | 2201-002063 | C-CERAMIC,DISC;10nF,+80-20%,3KV,Y5V,TP,16x5,7 | |
| C601 | 2401-001914 | C-AL;1uF,20%,50V,BP,TP,5x11,5 | |
| C602 | 2301-000445 | C-FILM,PEF;4.7nF,5%,50V,TP,5.5x7x3mm,5mm | |
| C603 | 2401-001333 | C-AL;470nF,20%,50V,GP,TP,5x11,5 | |
| C604 | 2301-000192 | C-FILM,PEF;1nF,5%,50V,TP,5.3x10mm,5mm | |
| C605 | 2401-001914 | C-AL;1uF,20%,50V,BP,TP,5x11,5 | |
| C606 | 2301-000445 | C-FILM,PEF;4.7nF,5%,50V,TP,5.5x7x3mm,5mm | |
| C607 | 2401-001998 | C-AL;1000uF,20%,25V,GP,TP,10x20,5mm | |
| C701 | 2202-002037 | C-CERAMIC,MLC-AXIAL;100nF,80-20%,50V,Y5V,TP,2.2x3. | |
| C702 | 2401-002144 | C-AL;47uF,20%,16V,GP,TP,5x11,5 | |
| C703 | 2202-000243 | C-CERAMIC,MLC-AXIAL;33pF,5%,50V,SL,TP,3.5x19,- | |
| C705 | 2305-000289 | C-FILM,MPEF;220nF,5%,63V,TP,-,5mm | |
| C707 | 2401-000302 | C-AL;100uF,20%,25V,GP,TP,6.3x11,5 | |
| C709 | 2306-000122 | C-FILM,MPPF;100nF,5%,50V,TP,7.3x4.0x5.0mm, | |
| C710 | 2401-000302 | C-AL;100uF,20%,25V,GP,TP,6.3x11,5 | |
| C711 | 2401-002235 | C-AL;10uF,20%,16V,GP,TP,5x11mm,5mm | |
| C712 | 2401-000480 | C-AL;10uF,20%,50V,GP,TP,5x11,5 | |
| C713 | 2301-000247 | C-FILM,PEF;33nF,5%,50V,TP,8.1x4.5x13mm,5m | |
| C714 | 2301-000289 | C-FILM,PEF;5.6nF,5%,50V,TP,7x6x3,5 | |
| C715 | 2401-000647 | C-AL;2.2uF,20%,50V,BP,TP,5x11,5 | |
| C716 | 2401-000647 | C-AL;2.2uF,20%,50V,BP,TP,5x11,5 | |
| C717 | 2301-000289 | C-FILM,PEF;5.6nF,5%,50V,TP,7x6x3,5 | |
| C718 | 2301-000247 | C-FILM,PEF;33nF,5%,50V,TP,8.1x4.5x13mm,5m | |
| C719 | 2401-000480 | C-AL;10uF,20%,50V,GP,TP,5x11,5 | |
| C720 | 2401-002235 | C-AL;10uF,20%,16V,GP,TP,5x11mm,5mm | |
| C721 | 2301-000175 | C-FILM,PEF;15nF,5%,50V,TP,7.1x3.5x13mm,5m | |
| C722 | 2305-000289 | C-FILM,MPEF;220nF,5%,63V,TP,-,5mm | |
| C723 | 2301-000175 | C-FILM,PEF;15nF,5%,50V,TP,7.1x3.5x13mm,5m | |
| C725 | 2305-000289 | C-FILM,MPEF;220nF,5%,63V,TP,-,5mm | |
| C727 | 2305-000289 | C-FILM,MPEF;220nF,5%,63V,TP,-,5mm | |
| C730 | 2202-000231 | C-CERAMIC,MLC-AXIAL;330pF,10%,50V,Y5P,TP,3.5x19,- | |
| C731 | 2202-000231 | C-CERAMIC,MLC-AXIAL;330pF,10%,50V,Y5P,TP,3.5x19,- | |
| C732 | 2202-000231 | C-CERAMIC,MLC-AXIAL;330pF,10%,50V,Y5P,TP,3.5x19,- | |
| C733 | 2202-000231 | C-CERAMIC,MLC-AXIAL;330pF,10%,50V,Y5P,TP,3.5x19,- | |
| C801 | 2306-000321 | C-FILM,MPPF;470NF,5%,275V,TP,-,22.5 | |
| C802 | 2306-000321 | C-FILM,MPPF;470NF,5%,275V,TP,-,22.5 | |
| C804 | 2201-000332 | C-CERAMIC,DISC;2.2nF,20%,250VAC,Y5U,TP,11x7,7 | |
| C805 | 2201-000332 | C-CERAMIC,DISC;2.2nF,20%,250VAC,Y5U,TP,11x7,7 | |
| C806 | 2401-003031 | C-AL;470uF,20%,450V,GP,BK,35x45mm,1 | |
| C807 | 2303-000163 | C-FILM,PPF;2.2nF,5%,800V,TP,15x13x8.5,7.5 | |
| C808 | 2401-002292 | C-AL;47uF,20%,25V,WT,TP,8X11,5 | |
| C809 | 2301-000224 | C-FILM,PEF;22nF,5%,50V,TP,7.4x3.9x13mm,5m | |
| C811 | 2301-000310 | C-FILM,PEF;68nF,5%,50V,TP,8.0X8.5X4.0X5,5 | |
| C812 | 2201-002002 | C-CERAMIC,DISC;4700pF,20%,400V,+20%~-55%,TP,2 | |
| C813 | 2201-002002 | C-CERAMIC,DISC;4700pF,20%,400V,+20%~-55%,TP,2 | |
| C814 | 2201-000683 | C-CERAMIC,DISC;850pF,10%,1KV,Y5P,TP,10x5,5 | |
| C815 | 2401-003026 | C-AL;330uF,20%,200V,GP,ST,22x35,10 | |
| C816 | 2401-000293 | C-AL;100uF,+30-10%,200V,GP,TP,16x25 | |
| C817 | 2201-000599 | C-CERAMIC,DISC;560pF,10%,500V,Y5P,TP,7x4,5 | |
| C818 | 2401-000722 | C-AL;2200uF,20%,25V,WT,TP,16x25,7.5 | |
| C819 | 2201-000599 | C-CERAMIC,DISC;560pF,10%,500V,Y5P,TP,7x4,5 | |
| C820 | 2401-000722 | C-AL;2200uF,20%,25V,WT,TP,16x25,7.5 | |
| C821 | 2301-000192 | C-FILM,PEF;1nF,5%,50V,TP,5.3x10mm,5mm | |
| C822 | 2201-000599 | C-CERAMIC,DISC;560pF,10%,500V,Y5P,TP,7x4,5 | |
| C823 | 2401-001840 | C-AL;100uF,20%,16V,GP,TP,6.3x11,5 | |
| C824 | 2305-000289 | C-FILM,MPEF;220nF,5%,63V,TP,-,5mm | |
| C825 | 2306-000122 | C-FILM,MPPF;100nF,5%,50V,TP,7.3x4.0x5.0mm, | |
| C826 | 2401-001840 | C-AL;100uF,20%,16V,GP,TP,6.3x11,5 | |
| C827 | 2401-002235 | C-AL;10uF,20%,16V,GP,TP,5x11mm,5mm | |
| C828 | 2401-000493 | C-AL;10uF,20%,50V,LZ,TP,5x11mm,5mm | |
| C829 | 2401-000302 | C-AL;100uF,20%,25V,GP,TP,6.3x11,5 | |
| C830 | 2401-000611 | C-AL;1uF,20%,50V,WT,TP,5x11,5 | |
| C831 | 2401-000480 | C-AL;10uF,20%,50V,GP,TP,5x11,5 | |
| C832 | 2401-001840 | C-AL;100uF,20%,16V,GP,TP,6.3x11,5 | |
| C833 | 2401-002144 | C-AL;47uF,20%,16V,GP,TP,5x11,5 | |
| C835 | 2401-002286 | C-AL;470uF,20%,16V,WT,TP,10x12.5,5 | |
| C901 | 2201-000234 | C-CERAMIC,DISC;150pF,5%,50V,CH,TP,9.5x3,5 | |
| C902 | 2301-000108 | C-FILM,PEF;1.5nF,5%,50V,TP,6.5x3.0x5.5mm, | |
| C903 | 2201-000119 | C-CERAMIC,DISC;100nF,+80-20%,50V,Y5V,TP,8x3.5 | |
| C904 | 2401-000480 | C-AL;10uF,20%,50V,GP,TP,5x11,5 | |
| C905 | 2305-000665 | C-FILM,MPEF;100nF,5%,63V,TP,7.5x4.0x5.0mm, | |
| C906 | 2305-000665 | C-FILM,MPEF;100nF,5%,63V,TP,7.5x4.0x5.0mm, | |
| C907 | 2202-002037 | C-CERAMIC,MLC-AXIAL;100nF,80-20%,50V,Y5V,TP,2.2x3. | |
| C908 | 2202-002037 | C-CERAMIC,MLC-AXIAL;100nF,80-20%,50V,Y5V,TP,2.2x3. | |
| C909 | 2202-002037 | C-CERAMIC,MLC-AXIAL;100nF,80-20%,50V,Y5V,TP,2.2x3. | |
| C910 | 2202-000796 | C-CERAMIC,MLC-AXIAL;1NF,10%,50V,Y5P,TP,3.5X1.9MM,- | |
| C911 | 2202-000796 | C-CERAMIC,MLC-AXIAL;1NF,10%,50V,Y5P,TP,3.5X1.9MM,- | |
| C913 | 2301-000445 | C-FILM,PEF;4.7nF,5%,50V,TP,5.5x7x3mm,5mm | |
| C914 | 2401-002144 | C-AL;47uF,20%,16V,GP,TP,5x11,5 | |
| C915 | 2401-002144 | C-AL;47uF,20%,16V,GP,TP,5x11,5 | |
| C916 | 2201-000980 | C-CERAMIC,DISC;30pF,5%,50V,CH,TP,5.0x3.0,5mm | |
| C917 | 2201-000980 | C-CERAMIC,DISC;30pF,5%,50V,CH,TP,5.0x3.0,5mm | |
| C918 | 2301-000192 | C-FILM,PEF;1nF,5%,50V,TP,5.3x10mm,5mm | |
| C919 | 2202-002037 | C-CERAMIC,MLC-AXIAL;100nF,80-20%,50V,Y5V,TP,2.2x3. | |
| C920 | 2401-000480 | C-AL;10uF,20%,50V,GP,TP,5x11,5 | |
| C921 | 2202-000796 | C-CERAMIC,MLC-AXIAL;1NF,10%,50V,Y5P,TP,3.5X1.9MM,- | |
| C923 | 2202-002037 | C-CERAMIC,MLC-AXIAL;100nF,80-20%,50V,Y5V,TP,2.2x3. | |
| C924 | 2401-000480 | C-AL;10uF,20%,50V,GP,TP,5x11,5 | |
| C925 | 2202-002037 | C-CERAMIC,MLC-AXIAL;100nF,80-20%,50V,Y5V,TP,2.2x3. | |
| C926 | 2202-002037 | C-CERAMIC,MLC-AXIAL;100nF,80-20%,50V,Y5V,TP,2.2x3. | |
| C927 | 2202-002037 | C-CERAMIC,MLC-AXIAL;100nF,80-20%,50V,Y5V,TP,2.2x3. | |
| C928 | 2401-001333 | C-AL;470nF,20%,50V,GP,TP,5x11,5 | |
| CE01 | 2401-002597 | C-AL;220uF,20%,35V,GP,TP,10x12.5,5 | |
| CE02 | 2305-000665 | C-FILM,MPEF;100nF,5%,63V,TP,7.5x4.0x5.0mm, | |
| CE03 | 2305-000470 | C-FILM,MPEF;68nF,5%,100V,TP,-,5mm | |
| CN501B | AA39-20604A | LEAD CONNECTOR-ASSY;-,YBNH250-09,YBNH05/04,5/4P,5 | |
| CN602 | 3711-002644 | CONNECTOR-HEADER;BOX,5P,1R,2.5mm,STRAIGHT,SN | |
| CN701 | 3711-002647 | CONNECTOR-HEADER;BOX,8P,1R,2.5mm,STRAIGHT,SN | |
| CN802 | AA27-20004G | COIL-DEGAUSSING;-,25,16.9ohm,35T,L2600,E | |
| CN901A | 3711-002643 | CONNECTOR-HEADER;BOX,4P,1R,2.5mm,STRAIGHT,SN | |
| CN902 | 3711-002644 | CONNECTOR-HEADER;BOX,5P,1R,2.5mm,STRAIGHT,SN | |
| CT01 | 2305-000665 | C-FILM,MPEF;100nF,5%,63V,TP,7.5x4.0x5.0mm, | |
| CT02 | 2401-000242 | C-AL;100uF,20%,10V,GP,TP,5x11,5 | |
| CT03 | 2202-002037 | C-CERAMIC,MLC-AXIAL;100nF,80-20%,50V,Y5V,TP,2.2x3. | |
| CT04 | 2202-002037 | C-CERAMIC,MLC-AXIAL;100nF,80-20%,50V,Y5V,TP,2.2x3. | |
| CT05 | 2202-000164 | C-CERAMIC,MLC-AXIAL;.18NF,10%,50V,Y5P,TP,3.5X1.9MM, | |
| CT06 | 2401-002144 | C-AL;47uF,20%,16V,GP,TP,5x11,5 | |
| CT07 | 2301-000235 | C-FILM,PEF;3.9nF,5%,50V,TP,6.5x3.0x5.5mm, | |
| CT08 | 2401-001914 | C-AL;1uF,20%,50V,BP,TP,5x11,5 | |
| CT09 | 2305-000665 | C-FILM,MPEF;100nF,5%,63V,TP,7.5x4.0x5.0mm, | |
| CW701 | 2503-000161 | C-NETWORK;330pFx8,20%,50V,MCCB1H331MX8YT | |
| CW901 | 2503-000156 | C-NETWORK;100pFx4,20%,50V | |
| D201 | 0401-000005 | DIODE-SWITCHING;1N4148,75V,200MA,DO-35,TP | |
| D202 | 0401-000005 | DIODE-SWITCHING;1N4148,75V,200MA,DO-35,TP | |
| D203 | 0401-000005 | DIODE-SWITCHING;1N4148,75V,200MA,DO-35,TP | |
| D204 | 0401-000005 | DIODE-SWITCHING;1N4148,75V,200MA,DO-35,TP | |
| D205 | 0401-000005 | DIODE-SWITCHING;1N4148,75V,200MA,DO-35,TP | |
| D209 | 0402-000216 | DIODE-RECTIFIER;ERC24-06,600V,1.0A,DO-204 | |
| D210 | 0401-000005 | DIODE-SWITCHING;1N4148,75V,200MA,DO-35,TP | |
| D217 | 0401-000005 | DIODE-SWITCHING;1N4148,75V,200MA,DO-35,TP | |
| D301 | 0402-001105 | DIODE-RECTIFIER;ERB43-04SV1,400V,1.0A,-,TP | |
| D302 | 0401-000005 | DIODE-SWITCHING;1N4148,75V,200MA,DO-35,TP | |
| D303 | 0401-000005 | DIODE-SWITCHING;1N4148,75V,200MA,DO-35,TP | |
| D304 | 0401-000005 | DIODE-SWITCHING;1N4148,75V,200MA,DO-35,TP | |
| D401 | 0402-000493 | DIODE-RECTIFIER;1R5GU41,400V,1.5A,DO-15L,TP | |
| D402 | 0402-000132 | DIODE-RECTIFIER;1N4004,400V,1A,DO-41,TP | |
| D403 | 0402-000132 | DIODE-RECTIFIER;1N4004,400V,1A,DO-41,TP | |
| D404 | 0402-001012 | DIODE-RECTIFIER;FMP-3FU,1500V,5A,TO-3PF | |
| D406 | 0402-001105 | DIODE-RECTIFIER;ERB43-04SV1,400V,1.0A,-,TP | |
| D407 | 0402-000216 | DIODE-RECTIFIER;ERC24-06,600V,1.0A,DO-204 | |
| D410 | 0402-000493 | DIODE-RECTIFIER;1R5GU41,400V,1.5A,DO-15L,TP | |
| D507 | 0402-001105 | DIODE-RECTIFIER;ERB43-04SV1,400V,1.0A,-,TP | |
| D508 | 0402-001105 | DIODE-RECTIFIER;ERB43-04SV1,400V,1.0A,-,TP | |
| D509 | 0402-001105 | DIODE-RECTIFIER;ERB43-04SV1,400V,1.0A,-,TP | |
| D520 | 0402-000132 | DIODE-RECTIFIER;1N4004,400V,1A,DO-41,TP | |
| D601 | 0403-000296 | DIODE-ZENER;MTZ5.6B,5.6V,5.45-5.73V,500mW, | |
| D602 | 0401-000005 | DIODE-SWITCHING;1N4148,75V,200MA,DO-35,TP | |
| D801 | 0402-000213 | DIODE-RECTIFIER;ERB12-06,600V,1.0A,DO-41,TP | |

| Loc. No. | Code No. | Description ; Specification | Remark |
|---|---|---|---|
| D802 | 0402-001160 | DIODE-BRIDGE;D5SB60,600V,2.8A,SIP-4,ST | |
| D803 | 0402-001105 | DIODE-RECTIFIER;ERB43-04SV1,400V,1.0A,-,TP | |
| D804 | 0401-000005 | DIODE-SWITCHING;1N4148,75V,200MA,DO-35,TP | |
| D805 | 0402-000231 | DIODE-RECTIFIER;FMG-G26S,600V,4A,TO-220F,ST | |
| D806 | 0402-000493 | DIODE-RECTIFIER;1R5GU41,400V,1.5A,DO-15L,TP | |
| D807 | 0402-000233 | DIODE-RECTIFIER;FML-G12S,200V,5A,-,- | |
| D808 | 0402-000132 | DIODE-RECTIFIER;1N4004,400V,1A,DO-41,TP | |
| D809 | 0401-000005 | DIODE-SWITCHING;1N4148,75V,200MA,DO-35,TP | |
| D810 | 0401-000005 | DIODE-SWITCHING;1N4148,75V,200MA,DO-35,TP | |
| D813 | 0402-000493 | DIODE-RECTIFIER;1R5GU41,400V,1.5A,DO-15L,TP | |
| D901 | 0401-000005 | DIODE-SWITCHING;1N4148,75V,200MA,DO-35,TP | |
| D906 | 0401-000005 | DIODE-SWITCHING;1N4148,75V,200MA,DO-35,TP | |
| D907 | 0401-000005 | DIODE-SWITCHING;1N4148,75V,200MA,DO-35,TP | |
| DE01 | 0402-001105 | DIODE-RECTIFIER;ERB43-04SV1,400V,1.0A,-,TP | |
| DT01 | 0401-000005 | DIODE-SWITCHING;1N4148,75V,200MA,DO-35,TP | |
| DT02 | 0401-000005 | DIODE-SWITCHING;1N4148,75V,200MA,DO-35,TP | |
| DT05 | 0401-000005 | DIODE-SWITCHING;1N4148,75V,200MA,DO-35,TP | |
| DV801 | 1405-000187 | VARISTOR;750V,1250A,12.5x7mm,TP | |
| DV802 | 1405-000187 | VARISTOR;750V,1250A,12.5x7mm,TP | |
| DZ201 | 0403-000297 | DIODE-ZENER;MTZ6.2B,6.2V,5.96-6.27V,500mW, | |
| DZ202 | 0403-000297 | DIODE-ZENER;MTZ6.2B,6.2V,5.96-6.27V,500mW, | |
| DZ203 | 0403-000298 | DIODE-ZENER;MTZ6.8C,6.8V,6.66-7.01V,500mW, | |
| DZ204 | 0403-000662 | DIODE-ZENER;MTZ3.0B,3.0V,3.01-3.22V,500mW, | |
| DZ205 | 0403-000551 | DIODE-ZENER;MTZ3.9B,3.9V,3.89-4.16V,500mW, | |
| DZ206 | 0403-000294 | DIODE-ZENER;MTZ4.7B,4.7V,4.55-4.80V,500mW, | |
| DZ210 | 0403-000659 | DIODE-ZENER;MTZ2.0A,2V,1.88-2.10V,500mW,DO | |
| DZ302 | 0403-000545 | DIODE-ZENER;MTZ24B,24V,22.61-23.77V,500mW, | |
| DZ303 | 0403-000545 | DIODE-ZENER;MTZ24B,24V,22.61-23.77V,500mW, | |
| DZ304 | 0403-000545 | DIODE-ZENER;MTZ24B,24V,22.61-23.77V,500mW, | |
| DZ305 | 0403-000494 | DIODE-ZENER;MTZ39,39V,35.36-37.2V,500mW,DO | |
| DZ306 | 0403-000700 | DIODE-ZENER;TZP33A,33V,31-35V,1W,DO-41,TP | |
| DZ402 | 0403-000300 | DIODE-ZENER;MTZ8.2B,8.2V,7.78-8.19V,500mW, | |
| DZ403 | 0403-000698 | DIODE-ZENER;TZP12A,12V,11.4-12.6V,1W,DO-41 | |
| DZ505 | 0403-000563 | DIODE-ZENER;MTZ9.1B,9.1V,8.57-9.01V,500mW, | |
| DZ601 | 0403-000545 | DIODE-ZENER;MTZ24B,24V,22.61-23.77V,500mW, | |
| DZ602 | 0403-000545 | DIODE-ZENER;MTZ24B,24V,22.61-23.77V,500mW, | |
| DZ603 | 0403-000545 | DIODE-ZENER;MTZ24B,24V,22.61-23.77V,500mW, | |
| DZ604 | 0403-000545 | DIODE-ZENER;MTZ24B,24V,22.61-23.77V,500mW, | |
| DZ701 | 0403-000563 | DIODE-ZENER;MTZ9.1B,9.1V,8.57-9.01V,500mW, | |
| DZ702 | 0403-000563 | DIODE-ZENER;MTZ9.1B,9.1V,8.57-9.01V,500mW, | |
| DZ703 | 0403-000563 | DIODE-ZENER;MTZ9.1B,9.1V,8.57-9.01V,500mW, | |
| DZ704 | 0403-000563 | DIODE-ZENER;MTZ9.1B,9.1V,8.57-9.01V,500mW, | |
| DZ705 | 0403-000563 | DIODE-ZENER;MTZ9.1B,9.1V,8.57-9.01V,500mW, | |
| DZ801 | 0403-000300 | DIODE-ZENER;MTZ8.2B,8.2V,7.78-8.19V,500mW, | |
| DZ802 | 0403-000296 | DIODE-ZENER;MTZ5.6B,5.6V,5.45-5.73V,500mW, | |
| DZ803 | 0403-000296 | DIODE-ZENER;MTZ5.6B,5.6V,5.45-5.73V,500mW, | |
| DZ805 | 1203-001217 | IC-POSI.ADJUST REG.;431,TO-92,3P,4.58MIL,PLASTIC,2 | |
| DZ807 | 0403-000296 | DIODE-ZENER;MTZ5.6B,5.6V,5.45-5.73V,500mW, | |
| DZ808 | 0403-000562 | DIODE-ZENER;MTZ7.5B,7.5V,7.07-7.45V,500mW, | |
| DZ901 | 1203-000451 | IC-VOLTAGE REGULATOR;33,TO-92,3P,-,PLASTIC,31/35V,2 | |
| DZ904 | 0403-000563 | DIODE-ZENER;MTZ9.1B,9.1V,8.57-9.01V,500mW, | |
| DZ905 | 0403-000296 | DIODE-ZENER;MTZ5.6B,5.6V,5.45-5.73V,500mW, | |
| DZT01 | 0403-000355 | DIODE-ZENER;UZ5.1BSB,5.1V,4.97-5.18V,500mW | |
| ⚠ F801 | 3601-000281 | FUSE-FERRULE;250V,4A,TL,GLASS,5.2x20mm | |
| F801A | 3602-000114 | FUSE-HOLDER;-,-,30mohm | |
| F801B | 3602-000114 | FUSE-HOLDER;-,-,30mohm | |
| ⚠ F802 | 3601-001086 | FUSE-FERRULE;125V,5A,FA,GLASS,2.4x7.5mm | |
| ⚠ F803 | 3601-001086 | FUSE-FERRULE;125V,5A,FA,GLASS,2.4x7.5mm | |
| GT804A | AA39-20010B | LEAD-CONNECTOR,ASSY;-,YFH800-01,S,1P,500,1617#22 | |
| ⚠ HC101 | AA13-20004W | IC-HYBRID;-,PAP103T,SIP,6P,PRE-AMP,TP | |
| ⚠ IC201 | 0904-001294 | IC-BUS CONTROLLER; | |
| ⚠ IC301 | 1204-000517 | IC-VERTIVAL DEF.;LA7845,SIP,7P,-,PLASTIC,40V,11 | |
| ⚠ IC501 | 1201-001330 | IC-VIDEO AMP;6108,ZSIP,9P,-,SINGLE,-,PLASTI | |
| ⚠ IC601 | 1201-001064 | IC-POWER AMP;7297,ZIP,15P,-,DUAL,32dB,PLAST | |
| ⚠ IC701 | 1204-000473 | IC-AUDIO PROCESSOR;TDA9859,DIP,32P,-,PLASTIC,-,-, | |
| ⚠ IC801 | 1203-001482 | IC-PWM CONTROLLER;3S1265R,TO-3P,5P,210,PLASTIC,6 | |
| ⚠ IC802 | 0604-001038 | PHOTO-COUPLER;TR,130-260%,200mW,DIP-4,ST | |
| ⚠ IC803 | 1203-001006 | IC-VOLTAGE REGULATOR;78R05,TO-220F,4P,-,PLASTIC,4.8 | |
| ⚠ IC804 | 1203-000644 | IC-POSI.FIXED REG.;7630,SIP,10P,-,PLASTIC,5.1/8V, | |
| ⚠ IC901 | AA13-30021M | IC-MCU;-,SAA5291PS-135,8bit,SDIP,CK29 | |
| ⚠ IC902 | 1103-001105 | IC-EEPROM;24C040,4Kx1BIT,DIP,8P,300MIL,1 | |
| ⚠ ICE01 | 1201-000191 | IC-OP AMP;4558,DIP,8P,300MIL,DUAL,20V/mV | |
| J206 | 3301-000287 | CORE-FERRITE BEAD;AA,3.5x1.0x6.0mm,1500,2400G | |
| JA701 | 3722-000195 | JACK-SCART;42P,-,SN,BLK,NO | |
| L101 | 2701-000326 | INDUCTOR-AXIAL;560nH,10%,2.3x3.4mm | |
| L102 | 2701-000114 | INDUCTOR-AXIAL;10uH,10%,2.5x3.4mm | |
| L103 | 2701-000114 | INDUCTOR-AXIAL;10uH,10%,2.5x3.4mm | |

| Loc. No. | Code No. | Description ; Specification | Remark |
|---|---|---|---|
| L202 | 2701-000197 | INDUCTOR-AXIAL;5.6uH,10%,2.5x3.4mm | |
| L205 | 2701-000114 | INDUCTOR-AXIAL;10uH,10%,2.5x3.4mm | |
| L206 | 2701-000142 | INDUCTOR-AXIAL;1uH,10%,2.5x3.4mm | |
| L207 | 2701-000142 | INDUCTOR-AXIAL;1uH,10%,2.5x3.4mm | |
| L208 | 2701-000142 | INDUCTOR-AXIAL;1uH,10%,2.5x3.4mm | |
| L303 | 2701-000114 | INDUCTOR-AXIAL;10uH,10%,2.5x3.4mm | |
| L401 | AA27-40003H | COIL-HORIZ,WIDTH;-,2mH,DR15x20,2UEW0.35,ST | |
| L402 | AA27-30003G | COIL-LINERITY;-,44uH,DR14x15,PI0.2x10,18x33, | |
| L403 | 3301-000287 | CORE-FERRITE BEAD;AA,3.5x1.0x6.0mm,1500,2400G | |
| L404 | AA27-40003L | COIL-HORIZ,WIDTH;-,1.0mH,DR14x20,2UEW0.45,ST | |
| L501 | 2901-000297 | FILTER-EMI ON BOARD;-,3A,-,-,3.5x5,TP,- | |
| L601 | 3301-000287 | CORE-FERRITE BEAD;AA,3.5x1.0x6.0mm,1500,2400G | |
| L603 | 3301-000287 | CORE-FERRITE BEAD;AA,3.5x1.0x6.0mm,1500,2400G | |
| L701 | 2701-000114 | INDUCTOR-AXIAL;10uH,10%,2.5x3.4mm | |
| L702 | 2701-000114 | INDUCTOR-AXIAL;10uH,10%,2.5x3.4mm | |
| L703 | 2701-000114 | INDUCTOR-AXIAL;10uH,10%,2.5x3.4mm | |
| L704 | 2701-000114 | INDUCTOR-AXIAL;10uH,10%,2.5x3.4mm | |
| L705 | 2701-000114 | INDUCTOR-AXIAL;10uH,10%,2.5x3.4mm | |
| L706 | 2701-000114 | INDUCTOR-AXIAL;10uH,10%,2.5x3.4mm | |
| L707 | 2701-000114 | INDUCTOR-AXIAL;10uH,10%,2.5x3.4mm | |
| L708 | 2701-000114 | INDUCTOR-AXIAL;10uH,10%,2.5x3.4mm | |
| L709 | 2701-000114 | INDUCTOR-AXIAL;10uH,10%,2.5x3.4mm | |
| L801 | AA29-30002F | FILTER-LINE NOISE;-,6mH,2.45A,-,- | |
| L802 | 3301-000287 | CORE-FERRITE BEAD;AA,3.5x1.0x6.0mm,1500,2400G | |
| L803 | 3301-000287 | CORE-FERRITE BEAD;AA,3.5x1.0x6.0mm,1500,2400G | |
| L804 | 2901-000299 | FILTER-EMI ON BOARD;-,6A,UL/CSA,-,9x7.5,TP,- | |
| L805 | 2701-001032 | INDUCTOR-AXIAL;100uH,10%,5x14mm | |
| L806 | 2901-000297 | FILTER-EMI ON BOARD;-,3A,-,-,3.5x5,TP,- | |
| L807 | 3301-000287 | CORE-FERRITE BEAD;AA,3.5x1.0x6.0mm,1500,2400G | |
| L808 | 3301-000287 | CORE-FERRITE BEAD;AA,3.5x1.0x6.0mm,1500,2400G | |
| L901 | 2701-000189 | INDUCTOR-AXIAL;470nH,10%,2.5x3.4mm | |
| L903 | 2701-000197 | INDUCTOR-AXIAL;5.6uH,10%,2.5x3.4mm | |
| L904 | 2701-000211 | INDUCTOR-AXIAL;68uH,10%,2.5x3.4mm | |
| L905 | 2701-000114 | INDUCTOR-AXIAL;10uH,10%,2.5x3.4mm | |
| L906 | 2701-000114 | INDUCTOR-AXIAL;10uH,10%,2.5x3.4mm | |
| L907 | 2701-000114 | INDUCTOR-AXIAL;10uH,10%,2.5x3.4mm | |
| LT01 | 2901-000299 | FILTER-EMI ON BOARD;-,6A,UL/CSA,-,9x7.5,TP,- | |
| LT02 | 2901-000299 | FILTER-EMI ON BOARD;-,6A,UL/CSA,-,9x7.5,TP,- | |
| Q201 | 0501-000389 | TR-SMALL SIGNAL;KSC815,NPN,400mW,TO-92,TP,120- | |
| Q202 | 0501-000389 | TR-SMALL SIGNAL;KSC815,NPN,400mW,TO-92,TP,120- | |
| Q204 | 0501-000389 | TR-SMALL SIGNAL;KSC815,NPN,400mW,TO-92,TP,120- | |
| Q207 | 0501-000389 | TR-SMALL SIGNAL;KSC815,NPN,400mW,TO-92,TP,120- | |
| Q210 | 0501-000389 | TR-SMALL SIGNAL;KSC815,NPN,400mW,TO-92,TP,120- | |
| Q301 | 0501-000389 | TR-SMALL SIGNAL;KSC815,NPN,400mW,TO-92,TP,120- | |
| Q302 | 0501-000389 | TR-SMALL SIGNAL;KSC815,NPN,400mW,TO-92,TP,120- | |
| ⚠ Q401 | 0502-000298 | TR-POWER;KSD73,NPN,30W,TO-220,-,120-240 | |
| ⚠ Q402 | 0502-001007 | TR-POWER;KSC2073-H2,NPN,25W,TO-220,ST,6 | |
| ⚠ Q403 | 0502-001136 | TR-POWER;KSD5703,NPN,70W,TO-3PF,ST,8- | |
| Q701 | 0501-000389 | TR-SMALL SIGNAL;KSC815,NPN,400mW,TO-92,TP,120- | |
| Q702 | 0501-000389 | TR-SMALL SIGNAL;KSC815,NPN,400mW,TO-92,TP,120- | |
| Q801 | 0501-000369 | TR-SMALL SIGNAL;KSC2331-Y,NPN,1W,TO-92L,-,120- | |
| Q901 | 0501-000389 | TR-SMALL SIGNAL;KSC815,NPN,400mW,TO-92,TP,120- | |
| Q902 | 0504-000123 | TR-DIGITAL;KSR1010,NPN,300mW,10K,TO-92,TP | |
| Q903 | 0504-000123 | TR-DIGITAL;KSR1010,NPN,300mW,10K,TO-92,TP | |
| Q904 | 0504-000123 | TR-DIGITAL;KSR1010,NPN,300mW,10K,TO-92,TP | |
| Q905 | 0501-000389 | TR-SMALL SIGNAL;KSC815,NPN,400mW,TO-92,TP,120- | |
| Q907 | 0501-000389 | TR-SMALL SIGNAL;KSC815,NPN,400mW,TO-92,TP,120- | |
| Q908 | 0501-000389 | TR-SMALL SIGNAL;KSC815,NPN,400mW,TO-92,TP,120- | |
| QE01 | 0501-000283 | TR-SMALL SIGNAL;KSA539,PNP,400mW,TO-92,TP,120- | |
| QT01 | 0501-000389 | TR-SMALL SIGNAL;KSC815,NPN,400mW,TO-92,TP,120- | |
| QT02 | 0504-000125 | TR-DIGITAL;KSR1012,NPN,300mW,47K,TO-92,TP | |
| QT03 | 0501-000389 | TR-SMALL SIGNAL;KSC815,NPN,400mW,TO-92,TP,120- | |
| R201 | 2001-000290 | R-CARBON;10KOHM,5%,1/8W,AA,TP,- | |
| R202 | 2001-000786 | R-CARBON;47KOHM,5%,1/8W,AA,TP,- | |
| R203 | 2001-000290 | R-CARBON;10KOHM,5%,1/8W,AA,TP,- | |
| R204 | 2001-000290 | R-CARBON;10KOHM,5%,1/8W,AA,TP,- | |
| R212 | 2001-000005 | R-CARBON;390OHM,5%,1/8W,AA,TP,- | |
| R214 | 2001-000793 | R-CARBON;47OHM,5%,1/8W,AA,TP,- | |
| R215 | 2001-000780 | R-CARBON;470OHM,5%,1/8W,AA,TP,- | |
| R218 | 2001-000515 | R-CARBON;220OHM,5%,1/8W,AA,TP,- | |
| R219 | 2001-000343 | R-CARBON;130OHM,5%,1/8W,AA,TP,- | |
| R220 | 2001-000281 | R-CARBON;100OHM,5%,1/8W,AA,TP,- | |
| R221 | 2001-000281 | R-CARBON;100OHM,5%,1/8W,AA,TP,- | |
| R222 | 2701-000142 | INDUCTOR-AXIAL;1uH,10%,2.5x3.4mm | |
| R223 | 2001-000617 | R-CARBON;3.9MOHM,5%,1/8W,AA,TP,- | |
| R224 | 2001-000429 | R-CARBON;1KOHM,5%,1/8W,AA,TP,- | |
| R225 | 2001-001026 | R-CARBON;910OHM,5%,1/8W,AA,TP,- | |

| Loc. No. | Code No. | Description ; Specification | Remark |
|---|---|---|---|
| R226 | 2001-000793 | R-CARBON;47OHM,5%,1/8W,AA,TP,- | |
| R230 | 2001-000331 | R-CARBON;12KOHM,5%,1/8W,AA,TP,- | |
| R233 | 2001-000780 | R-CARBON;470OHM,5%,1/8W,AA,TP,- | |
| R234 | 2001-000780 | R-CARBON;470OHM,5%,1/8W,AA,TP,- | |
| R235 | 2001-000780 | R-CARBON;470OHM,5%,1/8W,AA,TP,- | |
| R237 | 2001-000007 | R-CARBON;3KOHM,5%,1/8W,AA,TP,- | |
| R238 | 2001-001110 | R-CARBON(S);240KOHM,5%,1/2W,AA,TP,- | |
| R239 | 2001-000008 | R-CARBON;15KOHM,5%,1/8W,AA,TP,- | |
| R240 | 2001-001125 | R-CARBON(S);300KOHM,5%,1/2W,AA,TP,- | |
| R241 | 2001-000429 | R-CARBON;1KOHM,5%,1/8W,AA,TP,- | |
| R243 | 2001-000232 | R-CARBON;1.3KOHM,5%,1/8W,AA,TP,- | |
| R246 | 2001-000273 | R-CARBON;100KOHM,5%,1/8W,AA,TP,- | |
| R247 | 2001-000281 | R-CARBON;100OHM,5%,1/8W,AA,TP,- | |
| R248 | 2001-000793 | R-CARBON;47OHM,5%,1/8W,AA,TP,- | |
| R249 | 2001-000429 | R-CARBON;1KOHM,5%,1/8W,AA,TP,- | |
| R250 | 2001-000938 | R-CARBON;68OHM,5%,1/8W,AA,TP,- | |
| R251 | 2001-000281 | R-CARBON;100OHM,5%,1/8W,AA,TP,- | |
| R252 | 2001-000563 | R-CARBON;27KOHM,5%,1/8W,AA,TP,- | |
| R253 | 2001-000591 | R-CARBON;3.3KOHM,5%,1/8W,AA,TP,- | |
| R255 | 2001-000008 | R-CARBON;15KOHM,5%,1/8W,AA,TP,- | |
| R256 | 2004-001234 | R-METAL;75Kohm,5%,1/8W,AA,TP,1.8x3.2mm | |
| R257 | 2001-000563 | R-CARBON;27KOHM,5%,1/8W,AA,TP,- | |
| R258 | 2004-001914 | R-METAL;39Kohm,2%,1/8W,AA,TP,1.8x3.5mm | |
| R259 | 2001-000281 | R-CARBON;100OHM,5%,1/8W,AA,TP,- | |
| R260 | 2001-001015 | R-CARBON;9.1KOHM,5%,1/8W,AA,TP,- | |
| R261 | 2001-000331 | R-CARBON;12KOHM,5%,1/8W,AA,TP,- | |
| R262 | 2001-001015 | R-CARBON;9.1KOHM,5%,1/8W,AA,TP,- | |
| R301 | 2001-001045 | R-CARBON(S);1.2KOHM,5%,1/2W,AA,TP,- | |
| R302 | 2001-001049 | R-CARBON(S);1.3KOHM,5%,1/2W,AA,TP,- | |
| R303 | 2001-000016 | R-CARBON(S);1OHM,5%,1/2W,AA,TP,- | |
| R304 | 2008-000254 | R-FUSIBLE(S);0.68ohm,5%,2W,AF,TP,3.9x10mm | |
| R305 | 2003-002069 | R-METAL OXIDE;470ohm,5%,2W,AF,TP,3.9x10mm | |
| R306 | 2003-002069 | R-METAL OXIDE;470ohm,5%,2W,AF,TP,3.9x10mm | |
| R308 | 2003-002069 | R-METAL OXIDE;470ohm,5%,2W,AF,TP,3.9x10mm | |
| R309 | 2001-000290 | R-CARBON;10KOHM,5%,1/8W,AA,TP,- | |
| R310 | 2001-000387 | R-CARBON;16KOHM,5%,1/8W,AA,TP,- | |
| R311 | 2001-000660 | R-CARBON;33KOHM,5%,1/8W,AA,TP,- | |
| R312 | 2001-000786 | R-CARBON;47KOHM,5%,1/8W,AA,TP,- | |
| R313 | 2001-000449 | R-CARBON;2.2KOHM,5%,1/8W,AA,TP,- | |
| R314 | 2001-000281 | R-CARBON;100OHM,5%,1/8W,AA,TP,- | |
| R315 | 2001-000290 | R-CARBON;10KOHM,5%,1/8W,AA,TP,- | |
| R316 | 2001-000660 | R-CARBON;33KOHM,5%,1/8W,AA,TP,- | |
| R317 | 2001-000449 | R-CARBON;2.2KOHM,5%,1/8W,AA,TP,- | |
| R404 | 2008-001013 | R-FUSIBLE(S);1.2ohm,5%,2W,AF,TP,3.9x10mm | |
| R405 | 2001-001138 | R-CARBON(S);390OHM,5%,1/2W,AA,TP,- | |
| R406 | 2003-002008 | R-METAL OXIDE(S);18Kohm,5%,2W,AF,TP,3.9x10mm | |
| R407 | 2003-001025 | R-METAL OXIDE(S);15Kohm,5%,2W,AF,TP,3.9x10mm | |
| R409 | 2008-000264 | R-FUSIBLE(S);1ohm,5%,1W,AF,TP,3.9x10mm | |
| R410 | 2001-001114 | R-CARBON(S);270OHM,5%,1/2W,AA,TP,- | |
| R411 | 2001-000022 | R-CARBON(S);33OHM,5%,1/2W,AA,TP,- | |
| R412 | 2001-000020 | R-CARBON(S);22OHM,5%,1/2W,AA,TP,- | |
| R413 | 2008-000251 | R-FUSIBLE(S);0.27ohm,10%,2W,AF,TP,3.9x10mm | |
| R414 | 2008-000278 | R-FUSIBLE(S);82ohm,5%,2W,AA,TP,3.9x10mm | |
| R415 | 2008-000251 | R-FUSIBLE(S);0.27ohm,10%,2W,AF,TP,3.9x10mm | |
| R417 | 2004-001899 | R-METAL(S);61.9Kohm,1%,1/2W,AA,TP,2.5x6.5 | |
| R418 | 2004-001967 | R-METAL(S);68Kohm,1%,1/2W,AA,TP,2.5x6.5mm | |
| R419 | 2004-001390 | R-METAL(S);1Kohm,2%,1/2W,AA,TP,2.4x6.4mm | |
| R420 | 2001-001114 | R-CARBON(S);270OHM,5%,1/2W,AA,TP,- | |
| R421 | 2001-001043 | R-CARBON(S);0OHM,5%,1/2W,AA,TP,- | |
| R422 | 2008-001013 | R-FUSIBLE(S);1.2ohm,5%,2W,AF,TP,3.9x10mm | |
| R424 | 2001-001043 | R-CARBON(S);0OHM,5%,1/2W,AA,TP,- | |
| R425 | 2001-001043 | R-CARBON(S);0OHM,5%,1/2W,AA,TP,- | |
| R428 | 2001-001043 | R-CARBON(S);0OHM,5%,1/2W,AA,TP,- | |
| R429 | 2001-001043 | R-CARBON(S);0OHM,5%,1/2W,AA,TP,- | |
| R430 | 2001-001043 | R-CARBON(S);0OHM,5%,1/2W,AA,TP,- | |
| R501 | 2001-000429 | R-CARBON;1KOHM,5%,1/8W,AA,TP,- | |
| R502 | 2001-000429 | R-CARBON;1KOHM,5%,1/8W,AA,TP,- | |
| R503 | 2001-000429 | R-CARBON;1KOHM,5%,1/8W,AA,TP,- | |
| R505 | 2008-000254 | R-FUSIBLE(S);0.68ohm,5%,2W,AF,TP,3.9x10mm | |
| R506 | 2008-000299 | R-FUSIBLE(S);47ohm,5%,2W,AF,TP,3.9x10mm | |
| R507 | 2001-000490 | R-CARBON;200OHM,5%,1/8W,AA,TP,- | |
| R508 | 2001-000490 | R-CARBON;200OHM,5%,1/8W,AA,TP,- | |
| R509 | 2001-000490 | R-CARBON;200OHM,5%,1/8W,AA,TP,- | |
| R510 | 2002-001009 | R-COMPOSITION;2.7Kohm,10%,1/2W,AA,TP,3.7X9.0 | |
| R517 | 2002-001009 | R-COMPOSITION;2.7Kohm,10%,1/2W,AA,TP,3.7X9.0 | |
| R518 | 2002-001009 | R-COMPOSITION;2.7Kohm,10%,1/2W,AA,TP,3.7X9.0 | |
| R519 | 2002-001009 | R-COMPOSITION;2.7Kohm,10%,1/2W,AA,TP,3.7X9.0 | |

| Loc. No. | Code No. | Description ; Specification | Remark |
|---|---|---|---|
| R520 | 2001-001062 | R-CARBON(S);10MOHM,5%,1/2W,AA,TP,- | |
| R601 | 2008-001002 | R-FUSIBLE(S);0.18ohm,5%,2W,AA,TP,3.9x10mm | |
| R602 | 2008-001002 | R-FUSIBLE(S);0.18ohm,5%,2W,AA,TP,3.9x10mm | |
| R603 | 2001-000472 | R-CARBON;2.7KOHM,5%,1/8W,AA,TP,- | |
| R604 | 2001-000331 | R-CARBON;12KOHM,5%,1/8W,AA,TP,- | |
| R605 | 2001-000429 | R-CARBON;1KOHM,5%,1/8W,AA,TP,- | |
| R606 | 2001-000472 | R-CARBON;2.7KOHM,5%,1/8W,AA,TP,- | |
| R607 | 2001-000331 | R-CARBON;12KOHM,5%,1/8W,AA,TP,- | |
| R701 | 2001-000281 | R-CARBON;100OHM,5%,1/8W,AA,TP,- | |
| R702 | 2001-000281 | R-CARBON;100OHM,5%,1/8W,AA,TP,- | |
| R703 | 2001-000515 | R-CARBON;220OHM,5%,1/8W,AA,TP,- | |
| R704 | 2001-000515 | R-CARBON;220OHM,5%,1/8W,AA,TP,- | |
| R705 | 2001-000281 | R-CARBON;100OHM,5%,1/8W,AA,TP,- | |
| R706 | 2001-000281 | R-CARBON;100OHM,5%,1/8W,AA,TP,- | |
| R707 | 2001-000515 | R-CARBON;220OHM,5%,1/8W,AA,TP,- | |
| R708 | 2001-000515 | R-CARBON;220OHM,5%,1/8W,AA,TP,- | |
| R709 | 2001-000969 | R-CARBON;75OHM,5%,1/8W,AA,TP,- | |
| R712 | 2001-000539 | R-CARBON;24KOHM,5%,1/8W,AA,TP,- | |
| R713 | 2001-000969 | R-CARBON;75OHM,5%,1/8W,AA,TP,- | |
| R714 | 2001-000429 | R-CARBON;1KOHM,5%,1/8W,AA,TP,- | |
| R715 | 2001-000969 | R-CARBON;75OHM,5%,1/8W,AA,TP,- | |
| R716 | 2001-000660 | R-CARBON;33KOHM,5%,1/8W,AA,TP,- | |
| R717 | 2001-000539 | R-CARBON;24KOHM,5%,1/8W,AA,TP,- | |
| R718 | 2001-000969 | R-CARBON;75OHM,5%,1/8W,AA,TP,- | |
| R719 | 2001-000527 | R-CARBON;22OHM,5%,1/8W,AA,TP,- | |
| R720 | 2001-000387 | R-CARBON;16KOHM,5%,1/8W,AA,TP,- | |
| R721 | 2001-000786 | R-CARBON;47KOHM,5%,1/8W,AA,TP,- | |
| R722 | 2001-000290 | R-CARBON;10KOHM,5%,1/8W,AA,TP,- | |
| R723 | 2001-000387 | R-CARBON;16KOHM,5%,1/8W,AA,TP,- | |
| R724 | 2001-000786 | R-CARBON;47KOHM,5%,1/8W,AA,TP,- | |
| R725 | 2001-000969 | R-CARBON;75OHM,5%,1/8W,AA,TP,- | |
| R728 | 2001-000281 | R-CARBON;100OHM,5%,1/8W,AA,TP,- | |
| R729 | 2001-000281 | R-CARBON;100OHM,5%,1/8W,AA,TP,- | |
| R732 | 2001-000290 | R-CARBON;10KOHM,5%,1/8W,AA,TP,- | |
| R733 | 2001-000969 | R-CARBON;75OHM,5%,1/8W,AA,TP,- | |
| R734 | 2001-000969 | R-CARBON;75OHM,5%,1/8W,AA,TP,- | |
| R735 | 2001-000969 | R-CARBON;75OHM,5%,1/8W,AA,TP,- | |
| R736 | 2001-000660 | R-CARBON;33KOHM,5%,1/8W,AA,TP,- | |
| R740 | 2701-000114 | INDUCTOR-AXIAL;10uH,10%,2.5x3.4mm | |
| R741 | 2701-000114 | INDUCTOR-AXIAL;10uH,10%,2.5x3.4mm | |
| R801 | 2002-001011 | R-COMPOSITION;3.3Mohm,10%,1/2W,AA,TP,3.7x9mm | |
| R802 | 2003-000994 | R-METAL OXIDE(S);33Kohm,5%,2W,AF,TP,3.9x10mm | |
| R803 | 2003-000994 | R-METAL OXIDE(S);33Kohm,5%,2W,AF,TP,3.9x10mm | |
| R804 | 2001-001150 | R-CARBON(S);470KOHM,5%,1/2W,AA,TP,- | |
| R805 | 2001-001150 | R-CARBON(S);470KOHM,5%,1/2W,AA,TP,- | |
| R806 | 2003-001023 | R-METAL OXIDE(S);120ohm,0.05,2W,AF,TP,3.9x10mm | |
| R807 | 2001-001178 | R-CARBON(S);680OHM,5%,1/2W,AA,TP,- | |
| R808 | 2002-001011 | R-COMPOSITION;3.3Mohm,10%,1/2W,AA,TP,3.7x9mm | |
| R809 | 2002-001013 | R-COMPOSITION;4.7Mohm,10%,1/2W,AA,TP,3.7x9mm | |
| R810 | 2003-000782 | R-METAL OXIDE(S);7.5Kohm,5%,2W,AA,TP,4x12mm | |
| R811 | 2003-000462 | R-METAL OXIDE(S);10Kohm,5%,2W,AA,TP,4x12mm | |
| R813 | 2001-000429 | R-CARBON;1KOHM,5%,1/8W,AA,TP,- | |
| R814 | 2001-000449 | R-CARBON;2.2KOHM,5%,1/8W,AA,TP,- | |
| R815 | 2004-001889 | R-METAL(S);127Kohm,1%,1/2W,AA,TP,2.5x6.5m | |
| R816 | 2004-001983 | R-METAL(S);2.49Kohm,1%,1/2W,AA,TP,2.4x6.4 | |
| R817 | 2001-001153 | R-CARBON(S);47OHM,5%,1/2W,AA,TP,- | |
| R818 | 2001-000290 | R-CARBON;10KOHM,5%,1/8W,AA,TP,- | |
| R819 | 2001-000290 | R-CARBON;10KOHM,5%,1/8W,AA,TP,- | |
| R820 | 2008-001047 | R-FUSIBLE(S);68ohm,5%,2W,AF,TP,3.9x10mm | |
| R821 | 2008-000271 | R-FUSIBLE(S);3.3ohm,5%,2W,AA,TP,3.9x10mm | |
| R822 | 2001-000290 | R-CARBON;10KOHM,5%,1/8W,AA,TP,- | |
| R823 | 2008-000264 | R-FUSIBLE(S);1ohm,5%,1W,AF,TP,3.9x10mm | |
| R824 | 2001-001125 | R-CARBON(S);300KOHM,5%,1/2W,AA,TP,- | |
| R826 | 2001-001153 | R-CARBON(S);47OHM,5%,1/2W,AA,TP,- | |
| R901 | 2001-000290 | R-CARBON;10KOHM,5%,1/8W,AA,TP,- | |
| R902 | 2001-000290 | R-CARBON;10KOHM,5%,1/8W,AA,TP,- | |
| R903 | 2001-000066 | R-CARBON(S);10KOHM,5%,1/2W,AA,TP,- | |
| R904 | 2004-000218 | R-METAL;10Kohm,1%,1/8W,AA,TP,1.8x3.2mm | |
| R905 | 2004-000218 | R-METAL;10Kohm,1%,1/8W,AA,TP,1.8x3.2mm | |
| R906 | 2004-000218 | R-METAL;10Kohm,1%,1/8W,AA,TP,1.8x3.2mm | |
| R908 | 2001-000241 | R-CARBON;1.5KOHM,5%,1/8W,AA,TP,- | |
| R909 | 2001-000472 | R-CARBON;2.7KOHM,5%,1/8W,AA,TP,- | |
| R910 | 2001-000924 | R-CARBON;680OHM,5%,1/8W,AA,TP,- | |
| R911 | 2001-000214 | R-CARBON;1.1KOHM,5%,1/8W,AA,TP,- | |
| R912 | 2001-000449 | R-CARBON;2.2KOHM,5%,1/8W,AA,TP,- | |
| R913 | 2001-000241 | R-CARBON;1.5KOHM,5%,1/8W,AA,TP,- | |
| R914 | 2001-000472 | R-CARBON;2.7KOHM,5%,1/8W,AA,TP,- | |

| Loc. No. | Code No. | Description ; Specification | Remark |
|---|---|---|---|
| R918 | 2001-000734 | R-CARBON;4.7KOHM,5%,1/8W,AA,TP,- | |
| R919 | 2001-000290 | R-CARBON;10KOHM,5%,1/8W,AA,TP,- | |
| R920 | 2001-000273 | R-CARBON;100KOHM,5%,1/8W,AA,TP,- | |
| R921 | 2001-000290 | R-CARBON;10KOHM,5%,1/8W,AA,TP,- | |
| R922 | 2001-000429 | R-CARBON;1KOHM,5%,1/8W,AA,TP,- | |
| R923 | 2001-000290 | R-CARBON;10KOHM,5%,1/8W,AA,TP,- | |
| R924 | 2001-000734 | R-CARBON;4.7KOHM,5%,1/8W,AA,TP,- | |
| R925 | 2001-000924 | R-CARBON;680OHM,5%,1/8W,AA,TP,- | |
| R926 | 2001-000924 | R-CARBON;680OHM,5%,1/8W,AA,TP,- | |
| R927 | 2701-000114 | INDUCTOR-AXIAL;10uH,10%,2.5x3.4mm | |
| R928 | 2701-000114 | INDUCTOR-AXIAL;10uH,10%,2.5x3.4mm | |
| R929 | 2701-000114 | INDUCTOR-AXIAL;10uH,10%,2.5x3.4mm | |
| R930 | 2001-000628 | R-CARBON;300OHM,5%,1/8W,AA,TP,- | |
| R932 | 2001-000780 | R-CARBON;470OHM,5%,1/8W,AA,TP,- | |
| R933 | 2001-000449 | R-CARBON;2.2KOHM,5%,1/8W,AA,TP,- | |
| R934 | 2001-000449 | R-CARBON;2.2KOHM,5%,1/8W,AA,TP,- | |
| R935 | 2001-000780 | R-CARBON;470OHM,5%,1/8W,AA,TP,- | |
| R936 | 2001-000449 | R-CARBON;2.2KOHM,5%,1/8W,AA,TP,- | |
| R937 | 2001-001062 | R-CARBON(S);10MOHM,5%,1/2W,AA,TP,- | |
| R939 | 2001-000006 | R-CARBON;2.4KOHM,5%,1/8W,AA,TP,- | |
| R941 | 2001-000734 | R-CARBON;4.7KOHM,5%,1/8W,AA,TP,- | |
| R942 | 2001-000429 | R-CARBON;1KOHM,5%,1/8W,AA,TP,- | |
| R945 | 2001-000734 | R-CARBON;4.7KOHM,5%,1/8W,AA,TP,- | |
| R948 | 2001-000449 | R-CARBON;2.2KOHM,5%,1/8W,AA,TP,- | |
| R951 | 2001-000449 | R-CARBON;2.2KOHM,5%,1/8W,AA,TP,- | |
| R953 | 2001-000281 | R-CARBON;100OHM,5%,1/8W,AA,TP,- | |
| R954 | 2001-000281 | R-CARBON;100OHM,5%,1/8W,AA,TP,- | |
| R955 | 2001-000429 | R-CARBON;1KOHM,5%,1/8W,AA,TP,- | |
| RE01 | 2004-001390 | R-METAL(S);1Kohm,2%,1/2W,AA,TP,2.4x6.4mm | |
| RE02 | 2004-001914 | R-METAL;39Kohm,2%,1/8W,AA,TP,1.8x3.5mm | |
| RE03 | 2001-000066 | R-CARBON(S);10KOHM,5%,1/2W,AA,TP,- | |
| RE04 | 2001-000066 | R-CARBON(S);10KOHM,5%,1/2W,AA,TP,- | |
| RE05 | 2001-000052 | R-CARBON(S);3.3KOHM,5%,1/2W,AA,TP,- | |
| RE06 | 2004-001390 | R-METAL(S);1Kohm,2%,1/2W,AA,TP,2.4x6.4mm | |
| RE07 | 2003-000652 | R-METAL OXIDE(S);330ohm,5%,2W,AF,TP,4x12mm | |
| RE08 | 2001-001120 | R-CARBON(S);3.3OHM,5%,1/2W,AA,TP,- | |
| RE09 | 2001-001125 | R-CARBON(S);300KOHM,5%,1/2W,AA,TP,- | |
| RE10 | 2001-001125 | R-CARBON(S);300KOHM,5%,1/2W,AA,TP,- | |
| RL801 | 3501-001040 | RELAY-POWER;12VDC,500mW,10A,1FormA,15mS,5m | |
| RP802 | 1404-001045 | THERMISTOR-NTC;4.7ohm,15%,2900K,35.0mW,TP | |
| RP803 | 1404-001087 | THERMISTOR-PTC;7ohm,30%,220V,270V,19A,-,ST | |
| RT01 | 2001-000734 | R-CARBON;4.7KOHM,5%,1/8W,AA,TP,- | |
| RT02 | 2001-000734 | R-CARBON;4.7KOHM,5%,1/8W,AA,TP,- | |
| RT03 | 2001-000429 | R-CARBON;1KOHM,5%,1/8W,AA,TP,- | |
| RT04 | 2001-000003 | R-CARBON;330OHM,5%,1/8W,AA,TP,- | |
| RT05 | 2001-000780 | R-CARBON;470OHM,5%,1/8W,AA,TP,- | |
| RT06 | 2001-000563 | R-CARBON;27KOHM,5%,1/8W,AA,TP,- | |
| RT07 | 2001-000429 | R-CARBON;1KOHM,5%,1/8W,AA,TP,- | |
| RT08 | 2001-000734 | R-CARBON;4.7KOHM,5%,1/8W,AA,TP,- | |
| RT13 | 2001-000005 | R-CARBON;390OHM,5%,1/8W,AA,TP,- | |
| RT14 | 2001-000429 | R-CARBON;1KOHM,5%,1/8W,AA,TP,- | |
| RT15 | 2003-000676 | R-METAL OXIDE(S);39ohm,5%,2W,AA,TP,4x12mm | |
| RT16 | 2001-000347 | R-CARBON;13KOHM,5%,1/8W,AA,TP,- | |
| RT18 | 2001-000786 | R-CARBON;47KOHM,5%,1/8W,AA,TP,- | |
| RT19 | 2001-000734 | R-CARBON;4.7KOHM,5%,1/8W,AA,TP,- | |
| RT20 | 2001-000734 | R-CARBON;4.7KOHM,5%,1/8W,AA,TP,- | |
| RW901 | 2011-000157 | R-NETWORK;10K,5%,1/8W,A,SIP,6P,BK | |
| SF101 | 2904-000302 | FILTER-SAW AV;38.90MHz,-,ST,13.9dB,PAL-B/G,- | |
| SW901 | 3404-000244 | SWITCH-TACT;15V,20mA,90-170gf,7.5x7mm,SPST | |
| SW902 | 3404-000244 | SWITCH-TACT;15V,20mA,90-170gf,7.5x7mm,SPST | |
| SW903 | 3404-000244 | SWITCH-TACT;15V,20mA,90-170gf,7.5x7mm,SPST | |
| SW904 | 3404-000244 | SWITCH-TACT;15V,20mA,90-170gf,7.5x7mm,SPST | |
| SW905 | 3404-000244 | SWITCH-TACT;15V,20mA,90-170gf,7.5x7mm,SPST | |
| ⚠ T401 | AA26-50001R | TRANS-HORIZ DRIVE;-,80MH,580UH,4UH,G11A EI19,ST | |
| ⚠ T444 | AA26-30005Q | TRANS-FLYBACK;-,FUH-29A001(S),29/25,130V | |
| ⚠ T801 | AA26-20007W | TRANS-SWITCHING;-,90~260V,130/15.5/12/8V,VDE,S | |
| ⚠ TU101 | AA40-10006H | TUNER-V/S;TELE4-108A,PAL-B/G,TR,181CH | |
| ⚠ V999 | 3704-001105 | SOCKET-CRT;11P,20PI,26.5PI,NI,- | |
| X202 | 2801-000274 | CRYSTAL-UNIT;4.433619MHz,30ppm,28-AAM,20pF, | |
| X203 | 2801-000226 | CRYSTAL-UNIT;3.579545MHz,20ppm,28-AAM,15pF, | |
| XT01 | 2801-003433 | CRYSTAL-UNIT;12MHz,30ppm,28-AAA,30pF,30ohm, | |
| Z208 | 2903-000181 | FILTER-CERAMIC;TR,5.5MHz,-,-,-,TP,TPS5.5MB-TF | |

## ASSY-PCB,A/V SIDE

| | | | |
|---|---|---|---|
| * | AA95-00004A | ASSY-PCB,A/V SIDE;-,566B~569B,S51A,PAL,-,- | |
| CA04 | 2202-000720 | C-CERAMIC,MLC-AXIAL;8.2nF,20%,16V,Y5R,TP,3.5x19,- | |
| CA05 | 2202-000720 | C-CERAMIC,MLC-AXIAL;8.2nF,20%,16V,Y5R,TP,3.5x19,- | |
| CA06 | 2401-001840 | C-AL;100uF,20%,16V,GP,TP,6.3x11,5 | |
| CA07 | 2401-001840 | C-AL;100uF,20%,16V,GP,TP,6.3x11,5 | |
| CN01A | AA39-20068E | LEAD-CONNECTOR,ASSY;-,YBNH025-08,67096-008,8P,500, | |
| CN05A | AA39-20069A | LEAD-CONNECTOR,ASSY;-,YBNH025-05,67096-005,5P,500, | |
| CN06A | AA39-20499B | LEAD CONNECTOR-ASSY;-,YBNH025-04,SMP025-04,4P,200 | |
| JE01 | 3722-000143 | JACK-PHONE;1P(VER),3.4mm,AG,BLK,NO | |
| JR01 | 3722-001031 | JACK-RCA;3P,3.6mm,#18,AU | |
| LA04 | 2701-000180 | INDUCTOR-AXIAL;33uH,5%,2.5x3.4mm | |
| LA05 | 2701-000180 | INDUCTOR-AXIAL;33uH,5%,2.5x3.4mm | |
| RA01 | 2001-000028 | R-CARBON(S);100OHM,5%,1/2W,AA,TP,- | |
| RA02 | 2001-000028 | R-CARBON(S);100OHM,5%,1/2W,AA,TP,- | |

## ASSY-SOUND

| | | | |
|---|---|---|---|
| * | AA95-00101A | ASSY-SOUND;-,CK,S51A,MONO,-,EUROPE | |
| CFM01 | 2904-001054 | FILTER-SAW AV;38.9MHz,SIP5P,-,13.9dB,NTSC-M/ | |
| CFM02 | 2904-001010 | FILTER-SAW AV;32.9~33.4MHz,SIP5P,ST,14.4dB,P | |
| CM01 | 2301-000383 | C-FILM,PEF;10nF,5%,50V,TP,6x7x3.2mm,5mm | |
| CM02 | 2401-000603 | C-AL;1uF,20%,50V,GP,TP,5x11,5 | |
| CM03 | 2401-002144 | C-AL;47uF,20%,16V,GP,TP,5x11,5 | |
| CM04 | 2305-000665 | C-FILM,MPEF;100nF,5%,63V,TP,7.5x4.0x5.0mm, | |
| CM05 | 2202-000127 | C-CERAMIC,MLC-AXIAL;10nF,+80-20%,25V,Y5V,TP,-,7.5 | |
| CM06 | 2202-000127 | C-CERAMIC,MLC-AXIAL;10nF,+80-20%,25V,Y5V,TP,-,7.5 | |
| CM07 | 2301-000224 | C-FILM,PEF;22nF,5%,50V,TP,7.4x3.9x13mm,5m | |
| CM08 | 2301-000383 | C-FILM,PEF;10nF,5%,50V,TP,6x7x3.2mm,5mm | |
| CM09 | 2202-000127 | C-CERAMIC,MLC-AXIAL;10nF,+80-20%,25V,Y5V,TP,-,7.5 | |
| CM10 | 2202-000127 | C-CERAMIC,MLC-AXIAL;10nF,+80-20%,25V,Y5V,TP,-,7.5 | |
| CM11 | 2202-000127 | C-CERAMIC,MLC-AXIAL;10nF,+80-20%,25V,Y5V,TP,-,7.5 | |
| CM12 | 2401-001333 | C-AL;470nF,20%,50V,GP,TP,5x11,5 | |
| CM13 | 2401-001333 | C-AL;470nF,20%,50V,GP,TP,5x11,5 | |
| CM14 | 2401-000660 | C-AL;2.2uF,20%,50V,GP,TP,5x11,5 | |
| CM15 | 2401-000660 | C-AL;2.2uF,20%,50V,GP,TP,5x11,5 | |
| CM16 | 2401-000660 | C-AL;2.2uF,20%,50V,GP,TP,5x11,5 | |
| CM17 | 2401-000660 | C-AL;2.2uF,20%,50V,GP,TP,5x11,5 | |
| CM19 | 2301-000383 | C-FILM,PEF;10nF,5%,50V,TP,6x7x3.2mm,5mm | |
| CNN01 | 3711-002704 | CONNECTOR-HEADER;NOWALL,6P,1R,2.5mm,ANGLE,SN | |
| CNN02 | 3711-002705 | CONNECTOR-HEADER;NOWALL,7P,1R,2.5mm,ANGLE,SN | |
| DM01 | 0401-001024 | DIODE-SWITCHING;BAW75,25V,300mA,DO-35,TP | |
| DM02 | 0401-001024 | DIODE-SWITCHING;BAW75,25V,300mA,DO-35,TP | |
| DM03 | 0401-000005 | DIODE-SWITCHING;1N4148,75V,200MA,DO-35,TP | |
| DM04 | 0401-000005 | DIODE-SWITCHING;1N4148,75V,200MA,DO-35,TP | |
| ICM01 | 1204-001491 | IC-SOUND PROCESSOR;LA7566S,DIP,24P,300MIL,PLASTIC,1 | |
| JM01 | 2701-000114 | INDUCTOR-AXIAL;10uH,10%,2.5x3.4mm | |
| LM02 | 2701-000202 | INDUCTOR-AXIAL;560nH,10%,2.5x3.4mm | |
| QM01 | 0504-000125 | TR-DIGITAL;KSR1012,NPN,300mW,47K,TO-92,TP | |
| QM04 | 0504-000123 | TR-DIGITAL;KSR1010,NPN,300mW,10K,TO-92,TP | |
| QM05 | 0504-000123 | TR-DIGITAL;KSR1010,NPN,300mW,10K,TO-92,TP | |
| QM06 | 0504-000123 | TR-DIGITAL;KSR1010,NPN,300mW,10K,TO-92,TP | |
| QM07 | 0504-000119 | TR-DIGITAL;KSR1004,NPN,300mW,47K-47K,TO-9 | |
| QM08 | 0504-000119 | TR-DIGITAL;KSR1004,NPN,300mW,47K-47K,TO-9 | |
| QM09 | 0501-000283 | TR-SMALL SIGNAL;KSA539,PNP,400mW,TO-92,TP,120- | |
| RM01 | 2001-000290 | R-CARBON;10KOHM,5%,1/8W,AA,TP,- | |
| RM02 | 2001-000362 | R-CARBON;150OHM,5%,1/8W,AA,TP,- | |
| RM03 | 2001-000449 | R-CARBON;2.2KOHM,5%,1/8W,AA,TP,- | |
| RM04 | 2001-000449 | R-CARBON;2.2KOHM,5%,1/8W,AA,TP,- | |
| RM05 | 2001-000449 | R-CARBON;2.2KOHM,5%,1/8W,AA,TP,- | |
| RM06 | 2001-000429 | R-CARBON;1KOHM,5%,1/8W,AA,TP,- | |
| RM09 | 2001-000522 | R-CARBON;22KOHM,5%,1/8W,AA,TP,- | |
| RM10 | 2001-000522 | R-CARBON;22KOHM,5%,1/8W,AA,TP,- | |
| RM11 | 2001-000003 | R-CARBON;330OHM,5%,1/8W,AA,TP,- | |
| RM13 | 2001-000003 | R-CARBON;330OHM,5%,1/8W,AA,TP,- | |
| RM15 | 2001-000857 | R-CARBON;560OHM,5%,1/8W,AA,TP,- | |
| RM16 | 2001-000734 | R-CARBON;4.7KOHM,5%,1/8W,AA,TP,- | |
| RM17 | 2001-000734 | R-CARBON;4.7KOHM,5%,1/8W,AA,TP,- | |
| RM18 | 2001-000734 | R-CARBON;4.7KOHM,5%,1/8W,AA,TP,- | |
| RM19 | 2001-000734 | R-CARBON;4.7KOHM,5%,1/8W,AA,TP,- | |
| RM20 | 2001-000734 | R-CARBON;4.7KOHM,5%,1/8W,AA,TP,- | |
| RM21 | 2001-000449 | R-CARBON;2.2KOHM,5%,1/8W,AA,TP,- | |
| RM22 | 2001-000449 | R-CARBON;2.2KOHM,5%,1/8W,AA,TP,- | |
| RM23 | 2001-000449 | R-CARBON;2.2KOHM,5%,1/8W,AA,TP,- | |
| RM24 | 2001-000008 | R-CARBON;15KOHM,5%,1/8W,AA,TP,- | |
| RM25 | 2001-000734 | R-CARBON;4.7KOHM,5%,1/8W,AA,TP,- | |

| Loc. No. | Code No. | Description ; Specification | Remark |
|---|---|---|---|
| RM27 | 2001-000832 | R-CARBON;510OHM,5%,1/8W,AA,TP,- | |
| RM28 | 2001-000832 | R-CARBON;510OHM,5%,1/8W,AA,TP,- | |
| TM01 | AA26-10006L | TRANS-IF;-,7MG,VIF,-,7mm,39pF,38.9MHz,S | |
| ZM01 | 2903-000200 | FILTER-CERAMIC;BP,6.5MHz,+-70KHz,6dB,-,TP,- | |
| ZM03 | 2903-000185 | FILTER-CERAMIC;BP,5.5MHz,+-75KHz,6dB,-,TP,- | |

## ASSY-PCB,CONTROL

| | | | |
|---|---|---|---|
| * | AA95-30002B | ASSY-PCB,CONTROL;-,SCT12B,-,- | |
| CN10A | AA39-20177A | LEAD-CONNECTOR,ASSY;-,YBNH025-05,67096-005,5P,300, | |
| CR01 | 2401-002144 | C-AL;47uF,20%,16V,GP,TP,5x11,5 | |
| LDR01 | 0601-000198 | LED;ROUND,RED/GRN,5.0mm,630/565nm | |
| PAR01 | AA59-60003J | MODULE-REMOCON;-,ORC-06H2,38KHz,940nm,MESH,H, | |
| RR01 | 2001-000793 | R-CARBON;47OHM,5%,1/8W,AA,TP,- | |
| RR02 | 2001-000522 | R-CARBON;22KOHM,5%,1/8W,AA,TP,- | |

## ASSY-R/G/B SWITCHING

| | | | |
|---|---|---|---|
| * | AA95-90038K | ASSY-R/G/B SWITCHING;-,-,S51A,PHILIPS MICOM ALL,-,- | |
| CNS01 | 3711-002702 | CONNECTOR-HEADER;NOWALL,4P,1R,2.5mm,ANGLE,SN | |
| CNS02 | 3711-002703 | CONNECTOR-HEADER;NOWALL,5P,1R,2.5mm,ANGLE,SN | |
| CNS03 | AA39-20052F | LEAD CONNECTOR-ASSY;-,YBNH025-04,YSH025-04,4P,200 | |
| CS01 | 2401-002619 | C-AL;47uF,20%,25V,GP,TP,5x11,5 | |
| CS02 | 2305-000665 | C-FILM,MPEF;100nF,5%,63V,TP,7.5x4.0x5.0mm, | |
| CS03 | 2202-002037 | C-CERAMIC,MLC-AXIAL;100nF,80-20%,50V,Y5V,TP,2.2x3. | |
| CS04 | 2202-002037 | C-CERAMIC,MLC-AXIAL;100nF,80-20%,50V,Y5V,TP,2.2x3. | |
| CS05 | 2202-002037 | C-CERAMIC,MLC-AXIAL;100nF,80-20%,50V,Y5V,TP,2.2x3. | |
| CS06 | 2202-002037 | C-CERAMIC,MLC-AXIAL;100nF,80-20%,50V,Y5V,TP,2.2x3. | |
| CS07 | 2202-002037 | C-CERAMIC,MLC-AXIAL;100nF,80-20%,50V,Y5V,TP,2.2x3. | |
| CS08 | 2202-002037 | C-CERAMIC,MLC-AXIAL;100nF,80-20%,50V,Y5V,TP,2.2x3. | |
| DS01 | 0401-000005 | DIODE-SWITCHING;1N4148,75V,200MA,DO-35,TP | |
| ICS01 | 1001-000223 | IC-VIDEO SWITCH;TEA5114A,-,DIP,16P,334MIL,SING | |
| RS01 | 2001-000003 | R-CARBON;330OHM,5%,1/8W,AA,TP,- | |
| RS04 | 2001-000003 | R-CARBON;330OHM,5%,1/8W,AA,TP,- | |
| RS06 | 2001-000003 | R-CARBON;330OHM,5%,1/8W,AA,TP,- | |
| RS07 | 2001-000429 | R-CARBON;1KOHM,5%,1/8W,AA,TP,- | |
| RS08 | 2001-000429 | R-CARBON;1KOHM,5%,1/8W,AA,TP,- | |
| RS09 | 2001-000429 | R-CARBON;1KOHM,5%,1/8W,AA,TP,- | |
| RS10 | 2001-000429 | R-CARBON;1KOHM,5%,1/8W,AA,TP,- | |
| RS11 | 2001-000429 | R-CARBON;1KOHM,5%,1/8W,AA,TP,- | |
| RS12 | 2001-000429 | R-CARBON;1KOHM,5%,1/8W,AA,TP,- | |
| RS13 | 2001-000003 | R-CARBON;330OHM,5%,1/8W,AA,TP,- | |
| RS14 | 2001-000003 | R-CARBON;330OHM,5%,1/8W,AA,TP,- | |
| RS15 | 2001-000003 | R-CARBON;330OHM,5%,1/8W,AA,TP,- | |
| RS16 | 2001-000003 | R-CARBON;330OHM,5%,1/8W,AA,TP,- | |
| RS17 | 2001-000003 | R-CARBON;330OHM,5%,1/8W,AA,TP,- | |
| RS18 | 2001-000003 | R-CARBON;330OHM,5%,1/8W,AA,TP,- | |

## ASSY-POWER,CORD

| | | | |
|---|---|---|---|
| | 3403-000179 | SWITCH-PUSH;250V,5A,DPST,-,JPW-2104B | |
| ⚠ | AA39-10005A | POWER-CORD;-,KKP419C,KLCE-2F,2.286MT,INLE | |
| LEADC | AA39-20175B | LEAD CONNECTOR-ASSY;-,YFH150-03,-,3(2)P,200mm,1617 | |

## REMOCON

| | | | |
|---|---|---|---|
| * | AA59-10116A | REMOCON;-,TM59,SS,SZM503AT,29,-,-,L/GR | |

## ASSY-HOLDER,SPK

| | | | |
|---|---|---|---|
| * | AA91-60003A | ASSY-HOLDER,SPK;-,PP,-,-,8ohm 10W,CT2199 | |

## ASSY-CRT

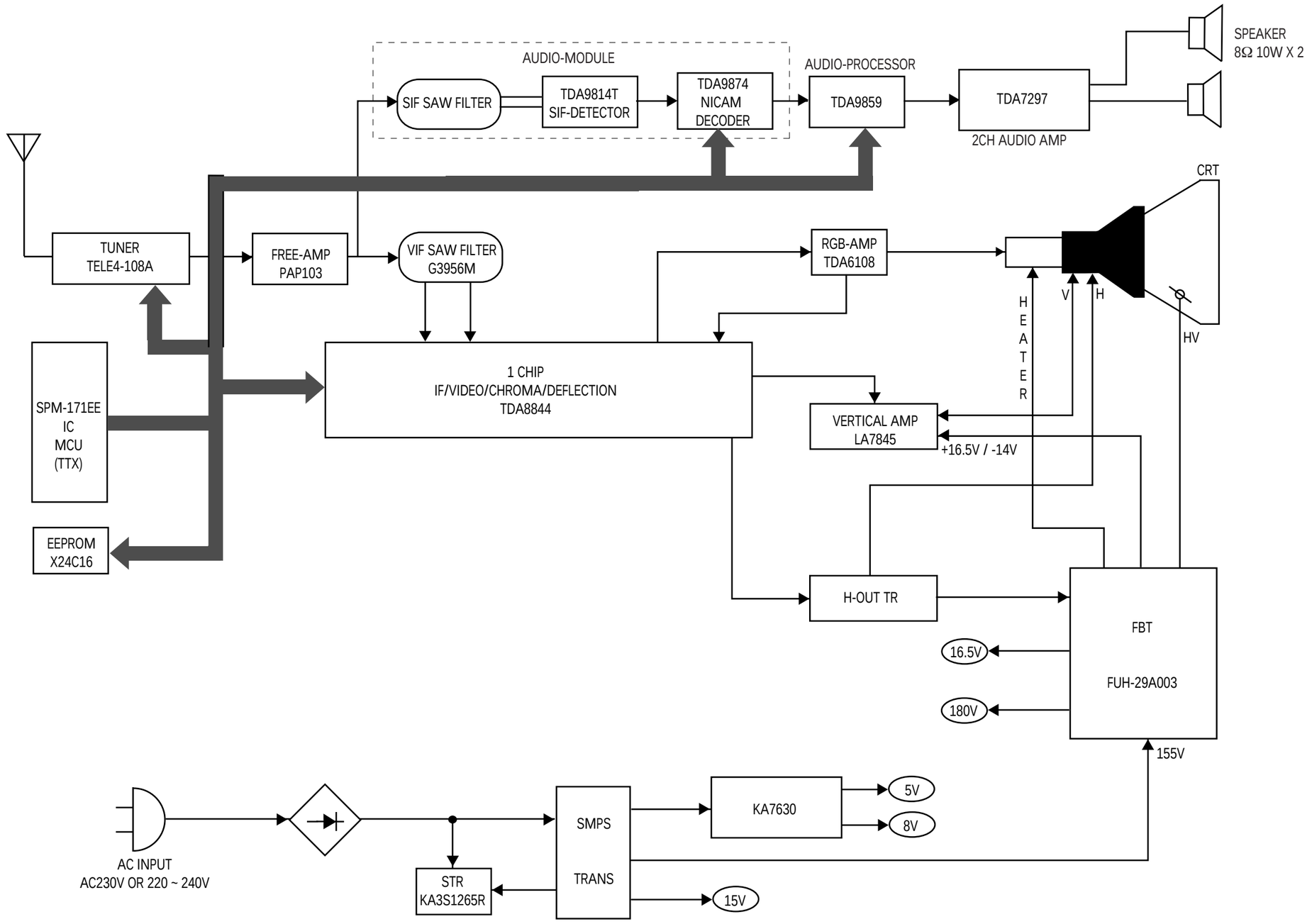
| | | | |
|---|---|---|---|
| ⚠ | AA03-10023R | CRT-COLOR;-,A59KPR84X01(DB),+500mG,25,1 | |

## ASSY-ACCESSORY

| | | | |
|---|---|---|---|
| | AA39-40001B | CABLE-RCA;-,RCA,1500mm,0.12/10,RED/WHT/Y | |
| | AA68-00043A | MANUAL-USERS;S51A,RUS,-,B5,W/P100(G),- | |

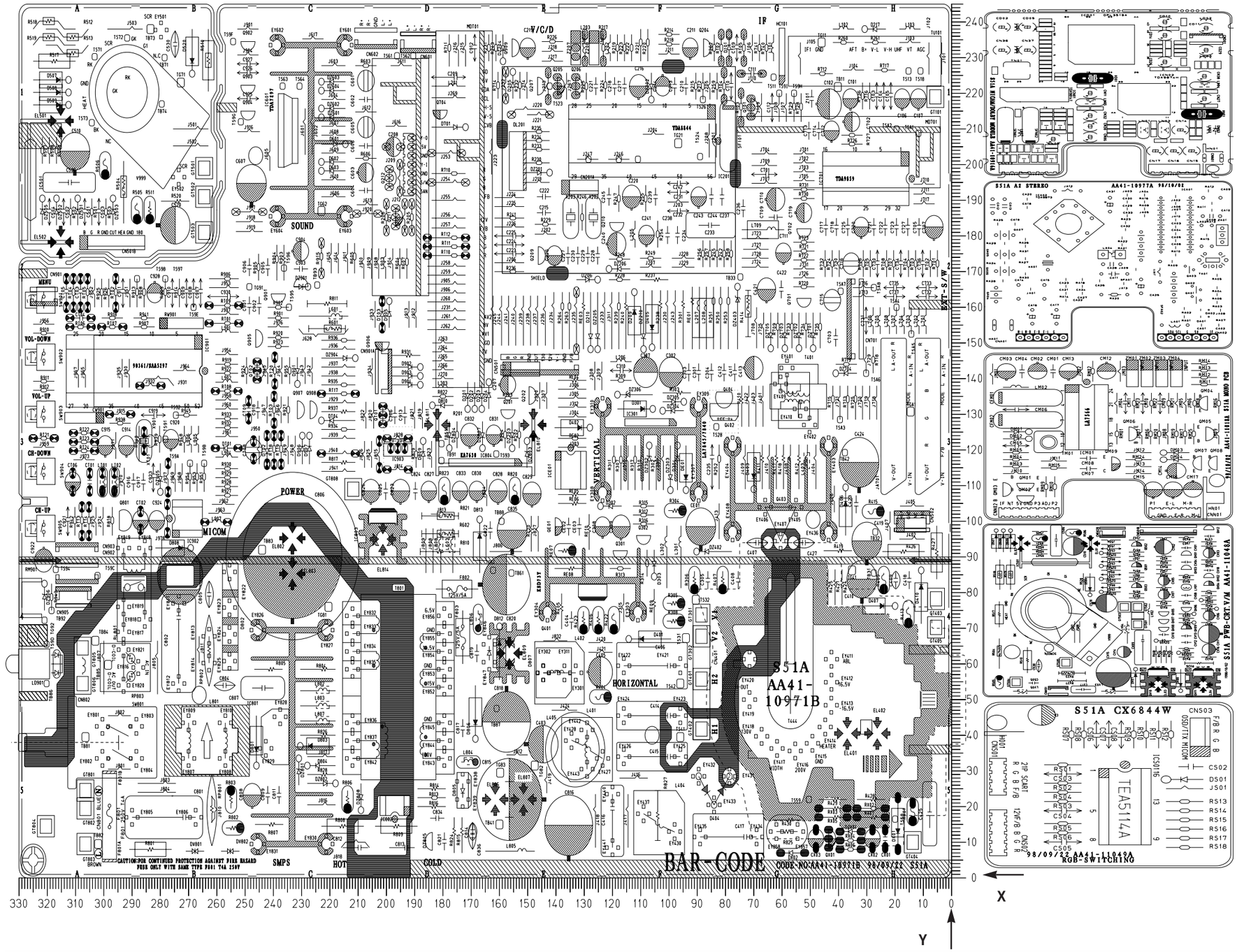
# 8. Block Diagram

## 8-1 S51A



# 9. PCB Layout

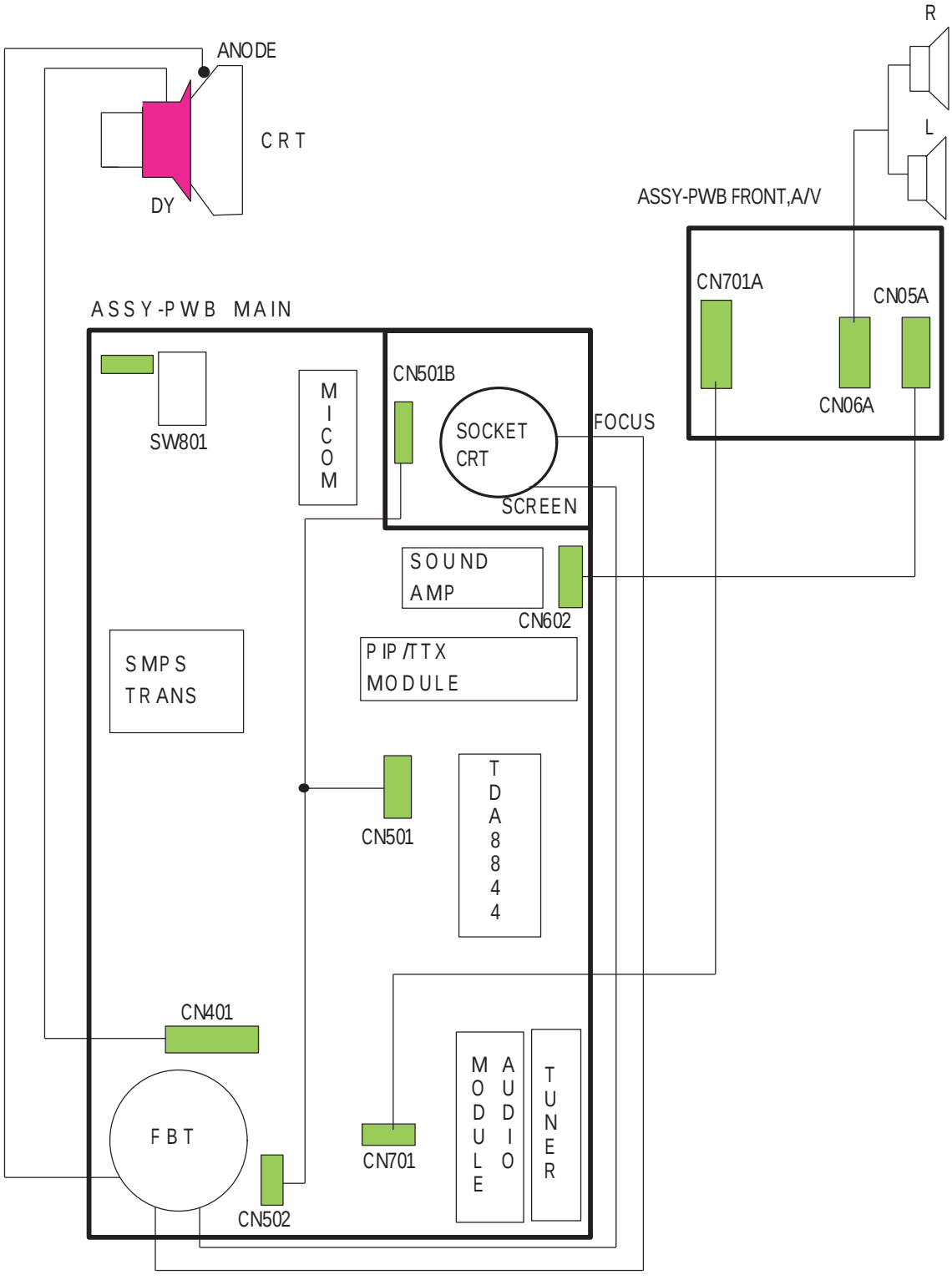
## 9-1 PCB Main




| Loc. No. | X | Y |
|---|---|---|
| **DIODE** | | |
| D101 | 78 | 236 |
| D201 | 171 | 131 |
| D202 | 168 | 131 |
| D203 | 166 | 131 |
| D204 | 163 | 139 |
| D205 | 155 | 226 |
| D206 | 125 | 167 |
| D209 | 112 | 164 |
| D210 | 127 | 148 |
| D217 | 30 | 238 |
| D301 | 105 | 131 |
| D302 | 124 | 104 |
| D303 | 105 | 84 |
| D304 | 97 | 121 |
| D401 | 114 | 67 |
| D402 | 128 | 126 |
| D403 | 70 | 109 |
| D404 | 89 | 28 |
| D405 | 106 | 148 |
| D406 | 37 | 109 |
| D407 | 20 | 76 |
| D410 | 10 | 86 |
| D507 | 312 | 223 |
| D508 | 312 | 220 |
| D509 | 312 | 216 |
| D520 | 268 | 225 |
| D601 | 214 | 205 |
| D602 | 223 | 200 |
| D603 | 223 | 198 |
| D701 | 172 | 210 |
| D801 | 246 | 31 |
| D802 | 255 | 60 |
| D803 | 230 | 37 |
| D804 | 228 | 31 |
| D805 | 173 | 22 |
| D806 | 168 | 39 |
| D807 | 156 | 63 |
| D808 | 269 | 92 |
| D809 | 187 | 122 |
| D810 | 183 | 132 |
| D812 | 160 | 70 |
| D813 | 167 | 100 |
| D901 | 231 | 138 |
| D902 | 188 | 143 |
| D903 | 188 | 140 |
| D904 | 188 | 138 |
| D905 | 199 | 161 |
| D906 | 229 | 124 |
| D907 | 227 | 124 |
| DE01 | 94 | 108 |
| DL201 | 155 | 206 |
| DT01 | 260 | 120 |
| DT02 | 242 | 116 |
| DT03 | 201 | 161 |
| DT04 | 223 | 128 |
| DV801 | 264 | 7 |
| DV802 | 251 | 7 |
| DX01 | 19 | 8 |
| DX02 | 60 | 7 |
| DZ201 | 142 | 197 |
| DZ202 | 106 | 218 |
| DZ203 | 155 | 120 |
| DZ204 | 158 | 229 |
| DZ205 | 125 | 148 |
| DZ206 | 121 | 170 |
| DZ210 | 109 | 148 |
| DZ302 | 107 | 121 |
| DZ303 | 99 | 108 |
| DZ304 | 102 | 131 |
| DZ305 | 94 | 133 |
| DZ306 | 118 | 135 |
| DZ402 | 90 | 91 |
| DZ403 | 75 | 165 |
| DZ501 | 309 | 190 |
| DZ502 | 316 | 190 |
| DZ503 | 296 | 190 |
| DZ505 | 321 | 190 |
| DZ601 | 223 | 213 |
| DZ602 | 223 | 215 |
| DZ603 | 223 | 223 |
| DZ604 | 223 | 220 |
| DZ701 | 49 | 148 |
| DZ702 | 54 | 148 |
| DZ703 | 59 | 148 |
| DZ704 | 41 | 141 |
| DZ705 | 64 | 148 |
| DZ801 | 231 | 33 |
| DZ802 | 218 | 26 |
| DZ803 | 150 | 122 |
| DZ804 | 177 | 120 |
| DZ805 | 183 | 12 |
| DZ807 | 166 | 120 |
| DZ808 | 209 | 19 |
| DZ901 | 227 | 165 |
| DZ904 | 211 | 145 |
| DZ905 | 280 | 108 |
| DZ906 | 321 | 82 |
| DZX01 | 39 | 13 |
| **IC** | | |
| HC101 | 60 | 224 |
| IC201 | 85 | 198 |
| IC301 | 123 | 132 |
| IC501 | 315 | 178 |
| IC601 | 238 | 185 |
| IC701 | 17 | 190 |
| IC801 | 245 | 9 |
| IC802 | 201 | 19 |
| IC803 | 201 | 95 |
| IC804 | 148 | 127 |
| IC901 | 267 | 134 |
| IC902 | 274 | 105 |
| IC903 | 193 | 120 |
| ICE01 | 130 | 118 |
| **TRANSISTOR** | | |
| Q101 | 71 | 213 |
| Q201 | 159 | 131 |
| Q202 | 149 | 132 |
| Q204 | 87 | 230 |
| Q205 | 139 | 219 |
| Q206 | 133 | 219 |
| Q207 | 146 | 219 |
| Q209 | 146 | 172 |
| Q210 | 121 | 183 |
| Q211 | 196 | 182 |
| Q212 | 199 | 193 |
| Q301 | 119 | 91 |
| Q302 | 111 | 96 |
| Q401 | 143 | 74 |
| Q402 | 83 | 130 |
| Q403 | 43 | 97 |
| Q404 | 83 | 134 |
| Q701 | 54 | 162 |
| Q702 | 54 | 182 |
| Q704 | 183 | 215 |
| Q801 | 293 | 97 |
| Q901 | 240 | 163 |
| Q902 | 251 | 234 |
| Q903 | 251 | 222 |
| Q904 | 251 | 215 |
| Q905 | 246 | 148 |
| Q906 | 204 | 150 |
| Q907 | 231 | 128 |
| Q908 | 227 | 128 |
| Q909 | 155 | 230 |
| QE01 | 140 | 96 |
| QT01 | 201 | 127 |
| QT02 | 245 | 139 |
| QX01 | 43 | 8 |

# 10. Wiring Diagram

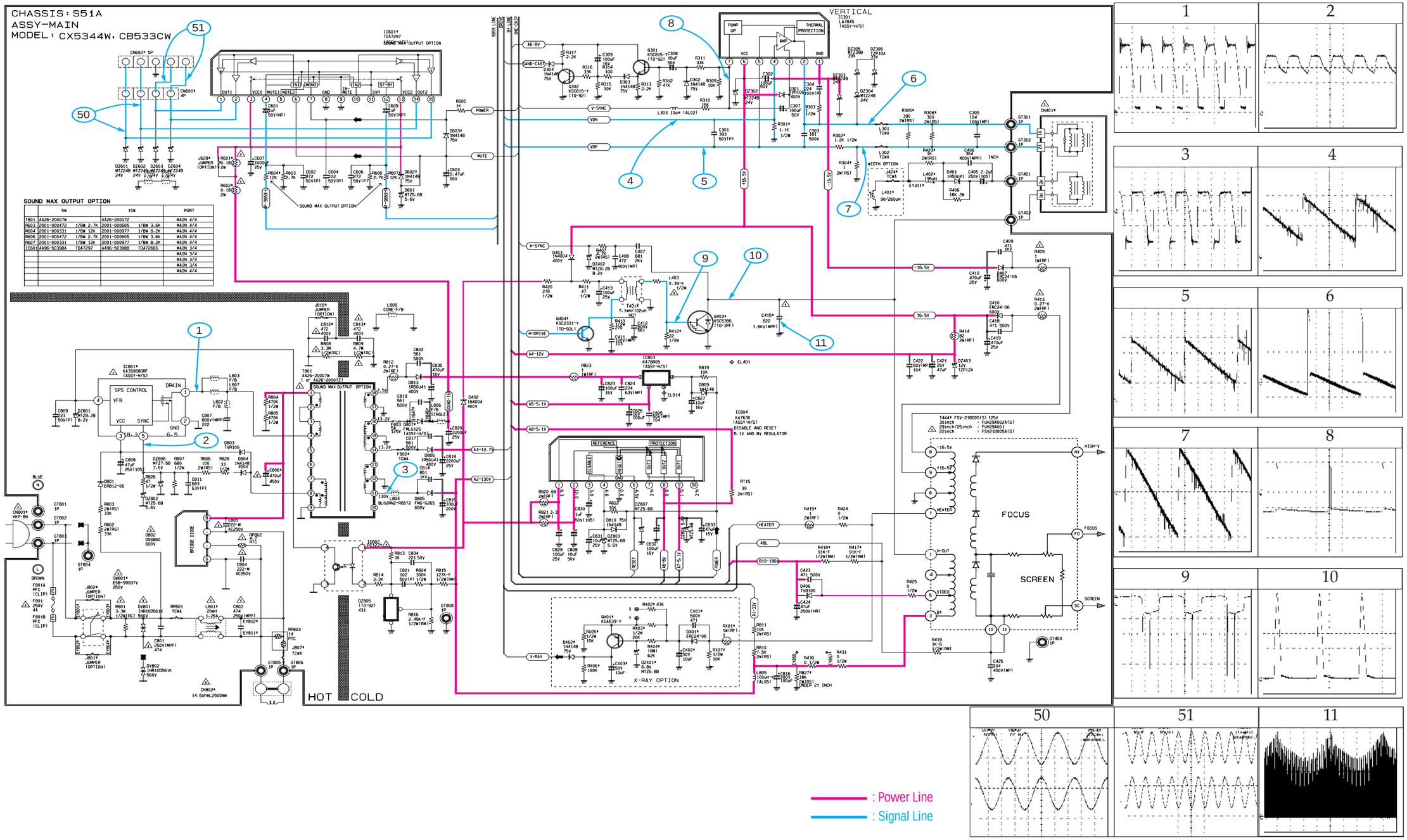
## 10-1 S51A



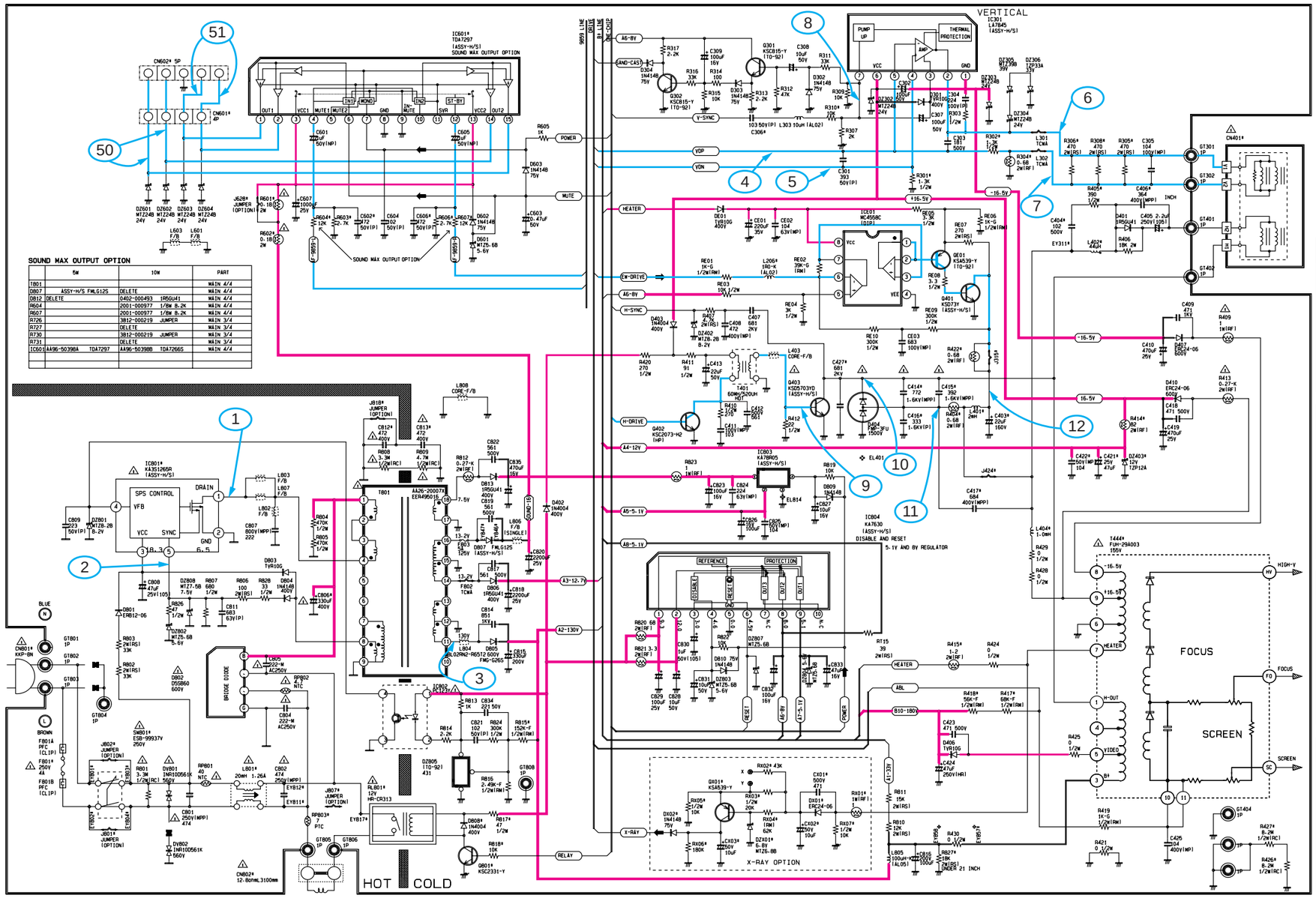
# MEMO

# 11. Schematic Diagrams

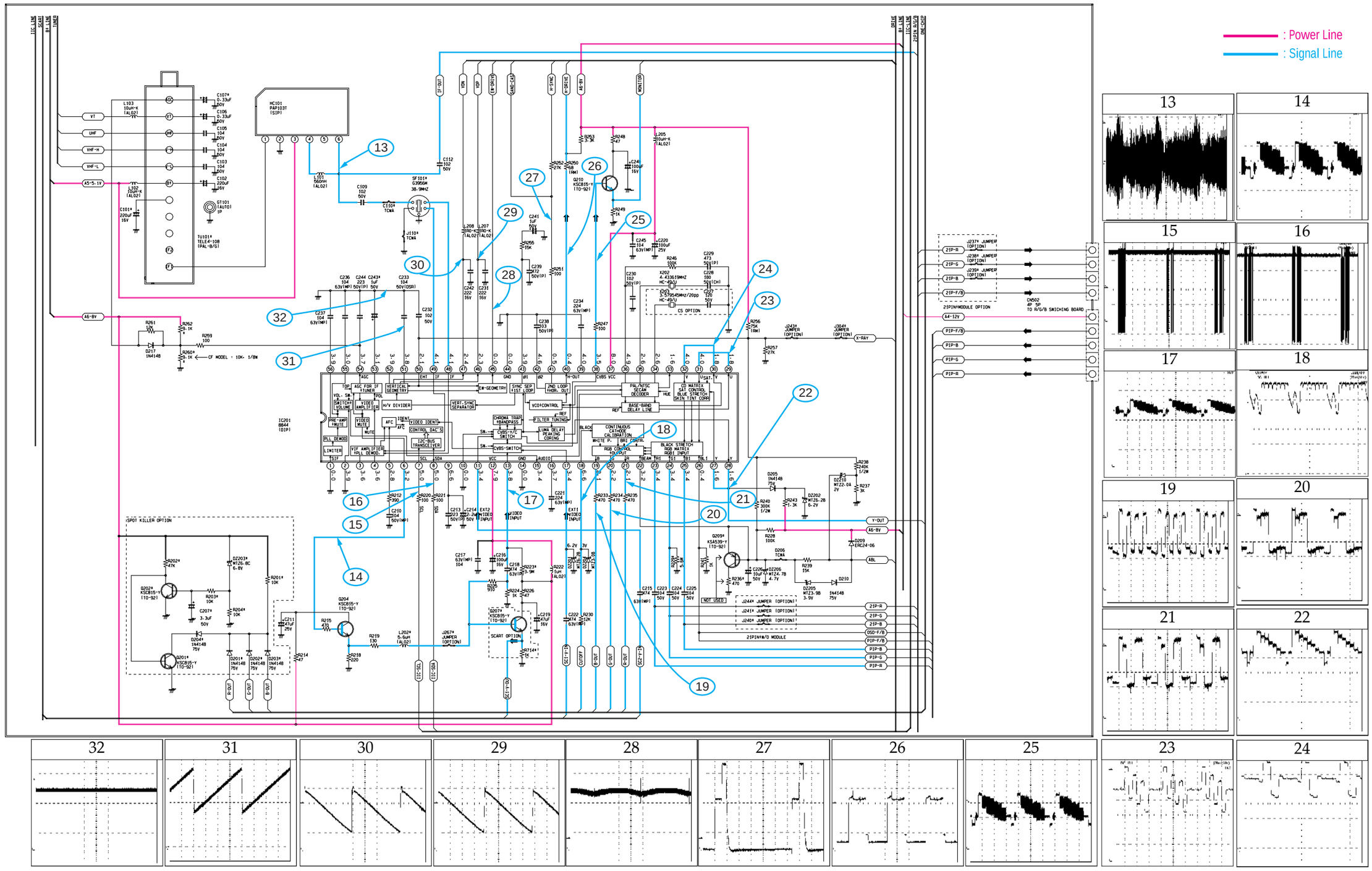
## 11-1 MAIN (Power 21")



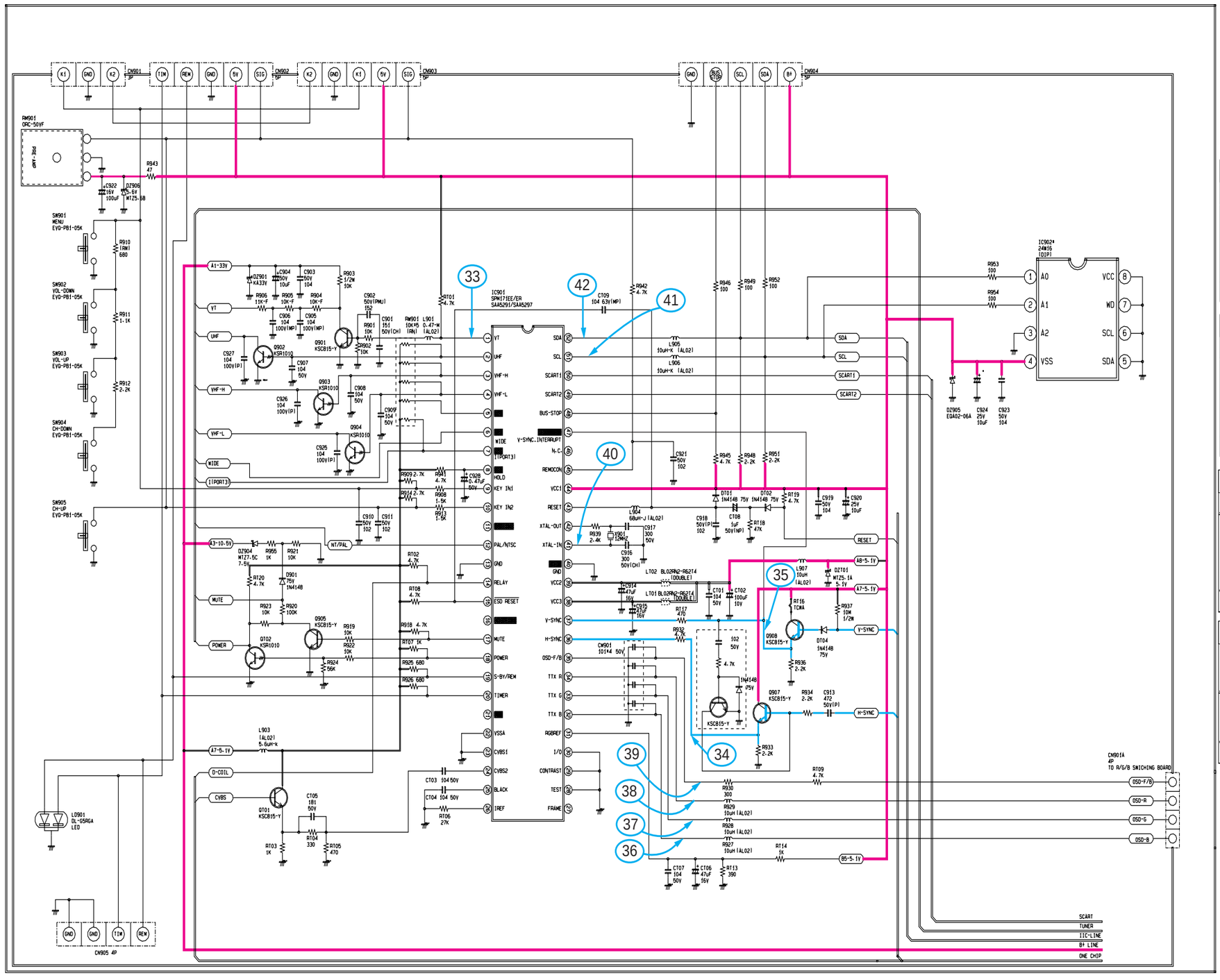
## 11-2 MAIN (Power 25” - 30”)

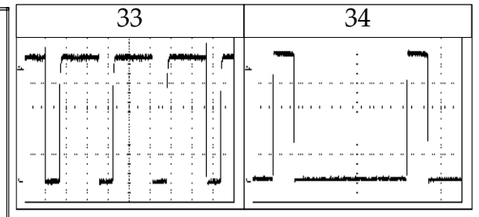


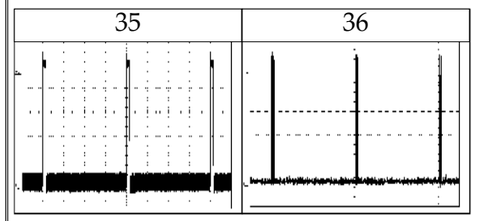
## 11-3 PWB MAIN (One-Chip)

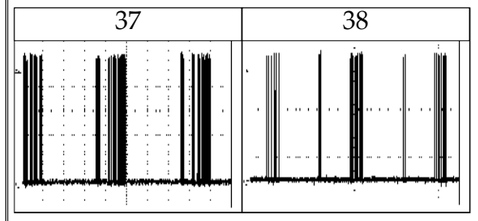


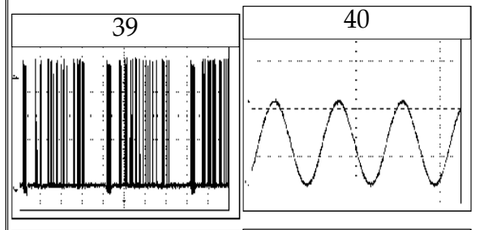
## 11-4 PWB MAIN (u-COM)

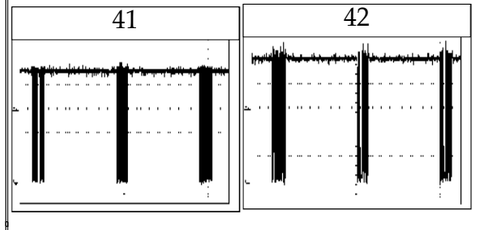


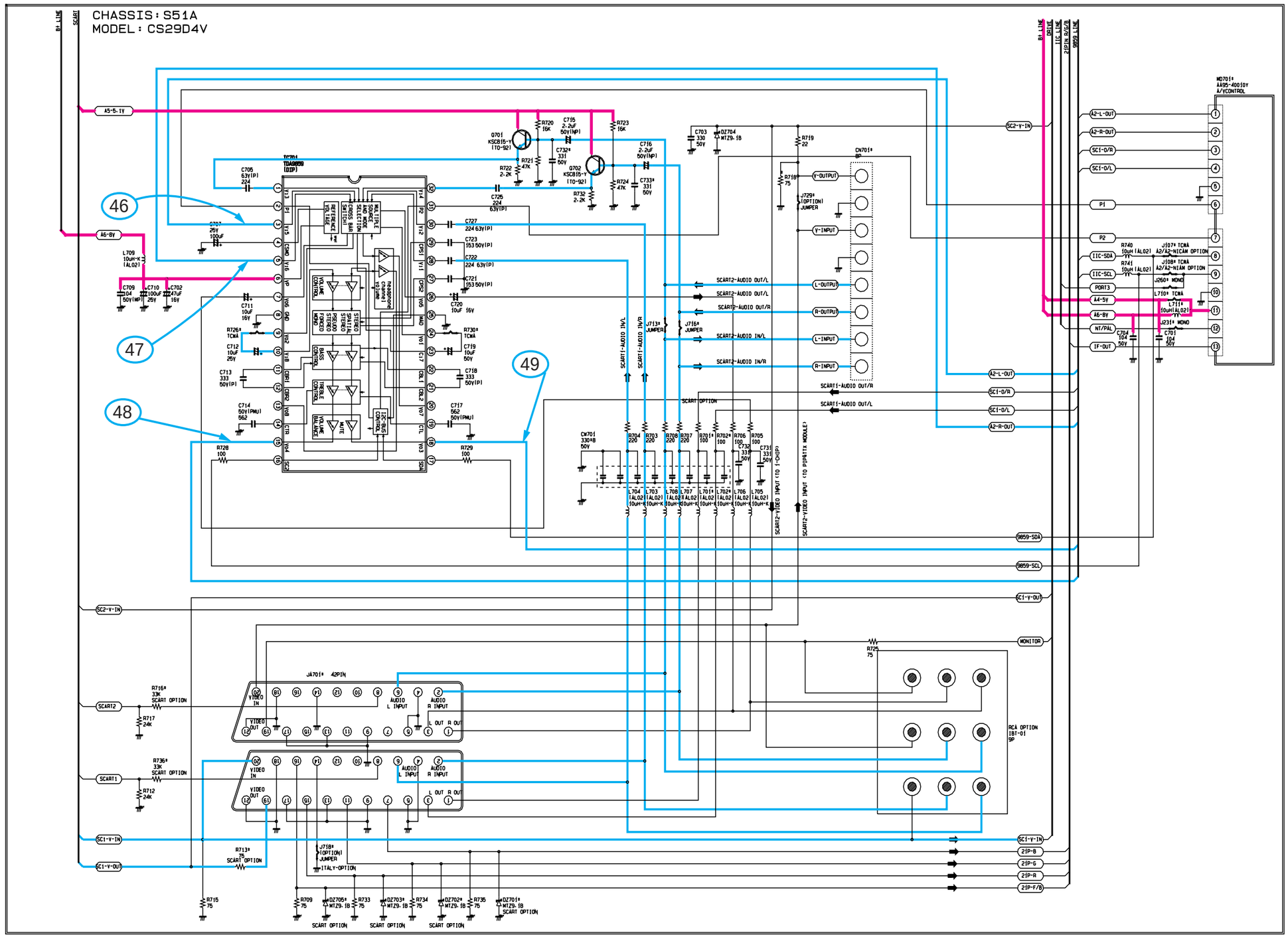



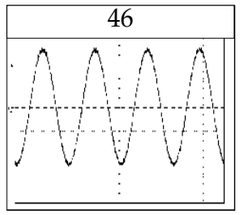



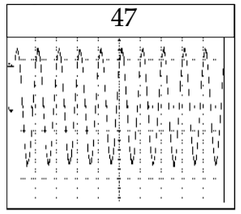



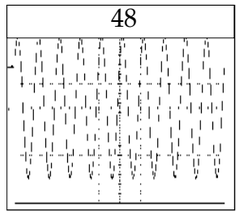



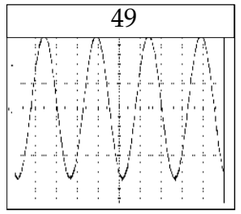
## 11-5 PWB MAIN (SUB)



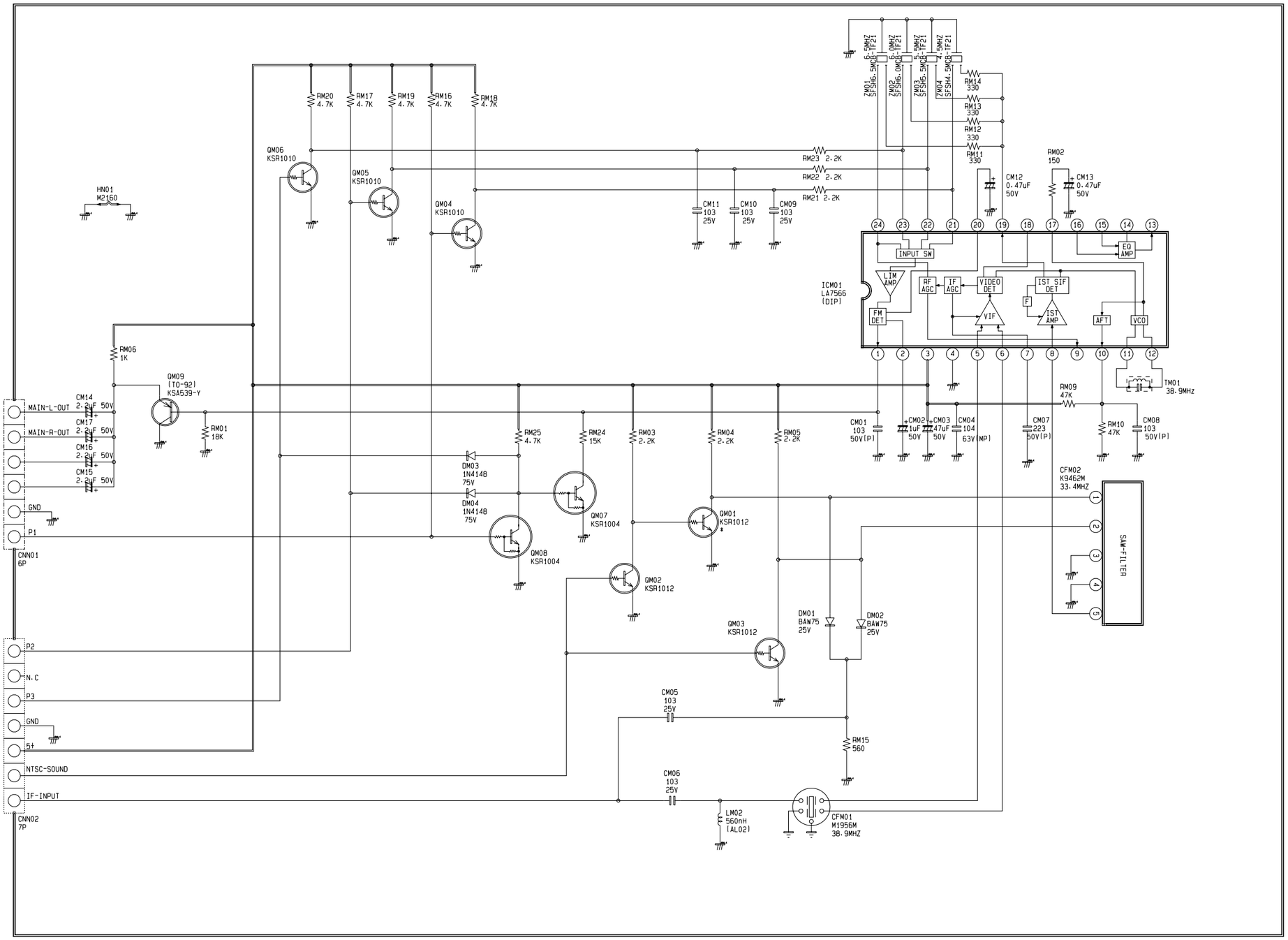




: Power Line
: Signal Line

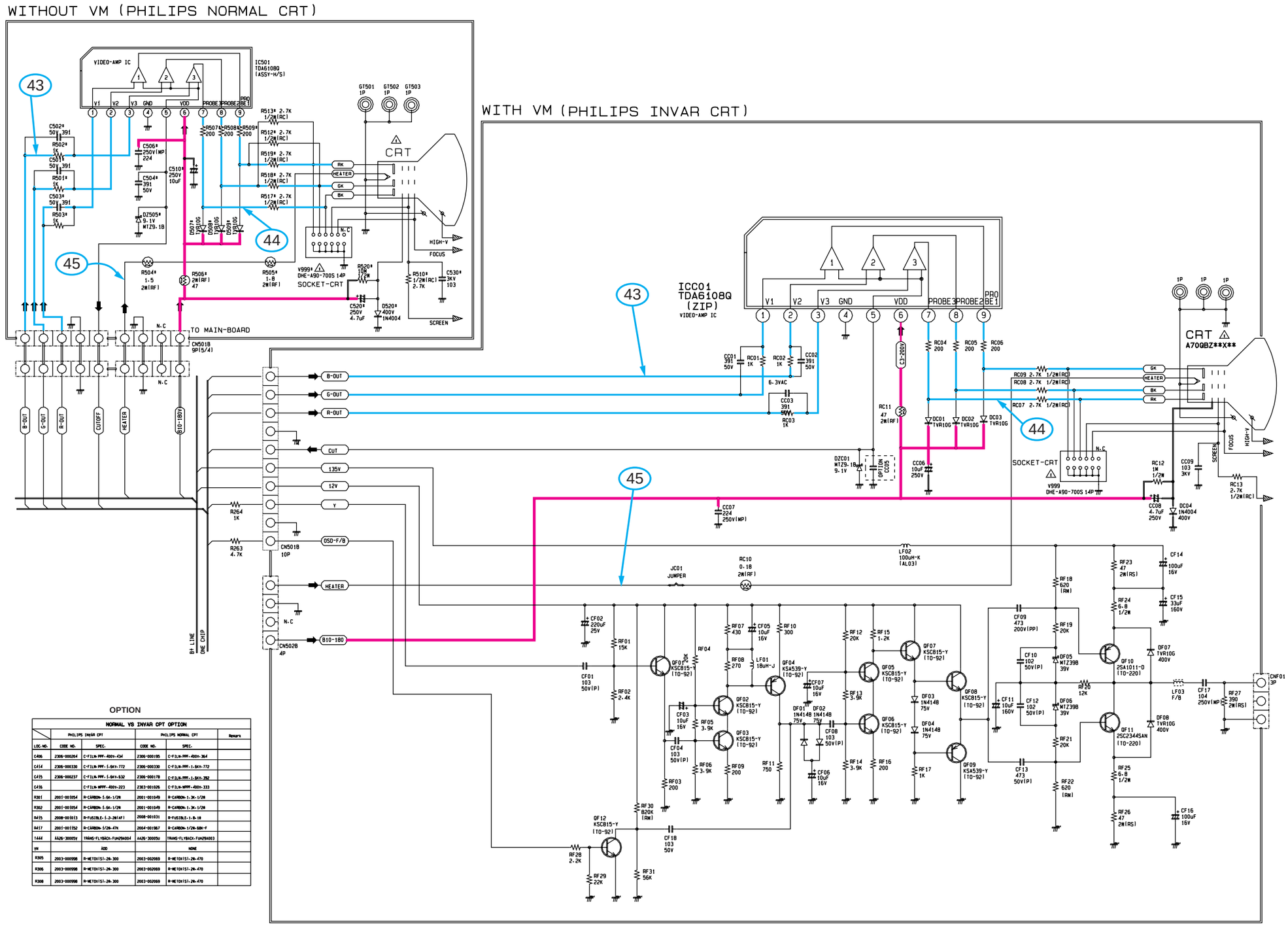
## 11-6 PWB MAIN (Sound Module Mono)

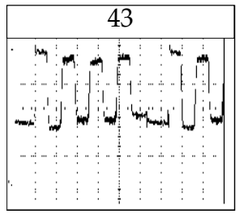


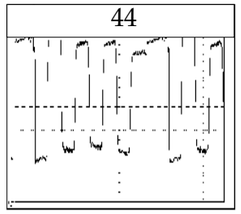
## 11-7 PWB MAIN (CRT)

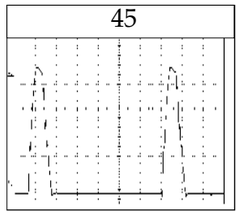
WITHOUT VM (PHILIPS NORMAL CRT)

WITH VM (PHILIPS INVAR CRT)

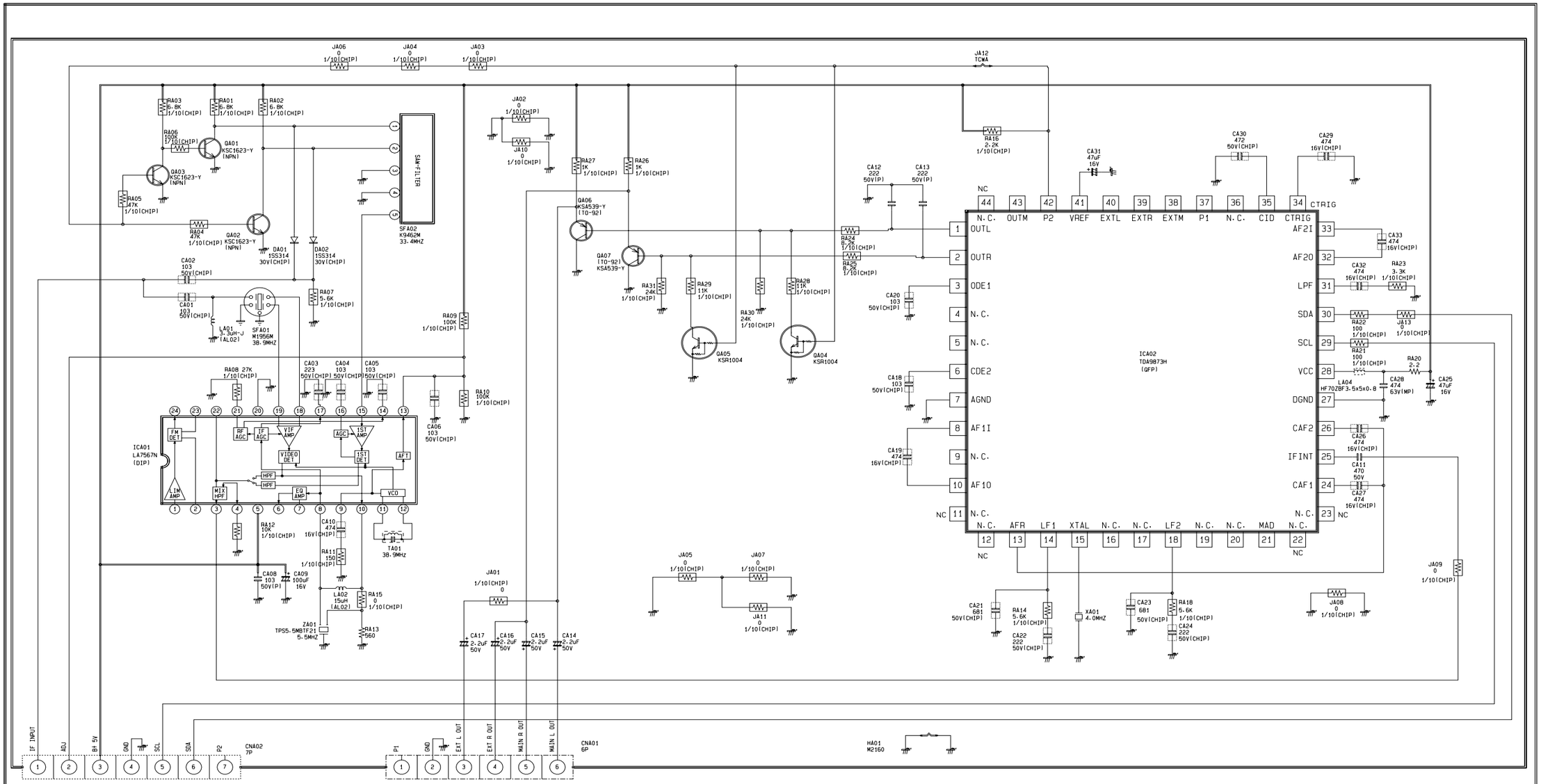


# 11-8 PWB MAIN (SOUND MODULE STEREO)




| CAPACITOR | |
|---|---|
| Ceramic - SL | No Mark |
| Ceramic - RH | (RH) |
| Ceramic - CH | (CH) |
| Polyester(Induct) | (P) |
| Polyester(Noninduct) | (PMU) |
| Polypropylene | (PP) |
| Metal Polyester | (MP) |
| M.P.Polypropylene | (MPP) |
| Tantalium | (T) |
| Non Polar | (NP) |

| RESISTOR | |
|---|---|
| Carbon | No Mark |
| Composition | (RC) |
| Metal Oxide | (RS) |
| Metal Film | (RM) |
| Fusible | (RF) |
| Cement-Wire | (RW) |
| Network | (RN) |

EXPRESSION
1 Resistance is shown ohm K=1.000 M=1.000.000
2 Unless otherwise noted in schematic all capacitor values less than 1 are expressed in ufd. the values more than 1 in pF.
3 Unless otherwise noted in schematic all inductor values areexpressed in uH.and the values less than 1 in mH.

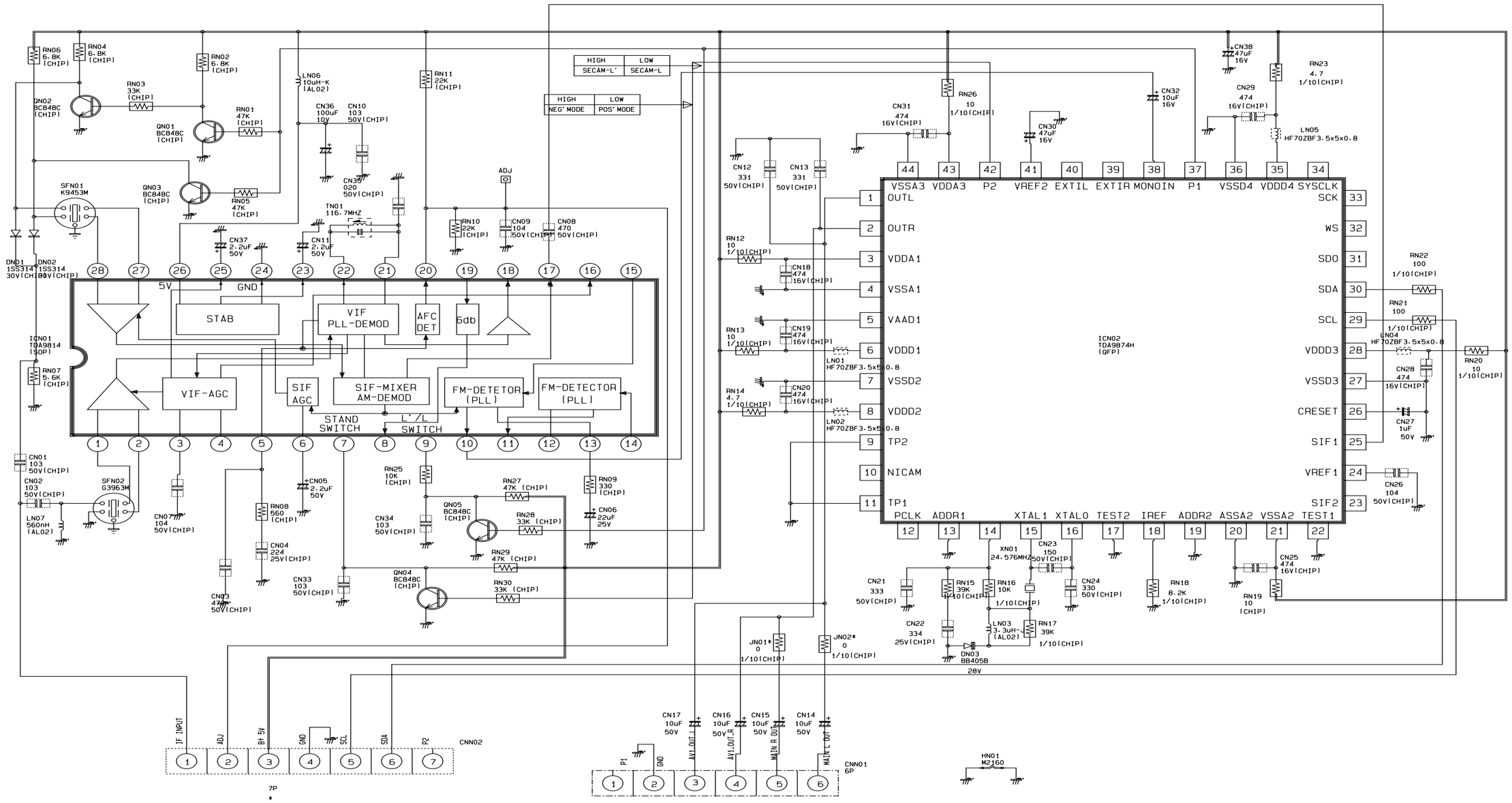
NOTE
The circuits are subject to change without notice to improve the picture quality.

SCHEMATIC DIAGRAM
CHASSIS: S51A
MODEL: CS29D9
BOARD NAME: SOUND MODULE A2 STEREO

**FILE NAME : A2**

| JOB-NO | TEAM | NODE | DESIGN | OPE | EDIT |
|---|---|---|---|---|---|
| | T.V.I. | NC20 | J.S.RA | | 1998.08.27 |

# 11-9 PWB MAIN (SOUND MODULE NICAM)




| C A P A C I T O R | |
|---|---|
| Ceramic - SL | No Mark |
| Ceramic - RH | (RH) |
| Ceramic - CH | (CH) |
| Polyester(Induct) | (P) |
| Polyester(Noninduct) | (PMU) |
| Polypropylene | (PP) |
| Metal Polyester | (MP) |
| M.P.Polypropylene | (MPP) |
| Tantalium | (T) |
| Non Polar | (NP) |

| R E S I S T O R | |
|---|---|
| Carbon | No Mark |
| Composition | (RC) |
| Metal Oxide | (RS) |
| Metal Film | (RM) |
| Fusible | (RF) |
| Cement. Wire | (RW) |
| Network | (RN) |

EXPRESSION

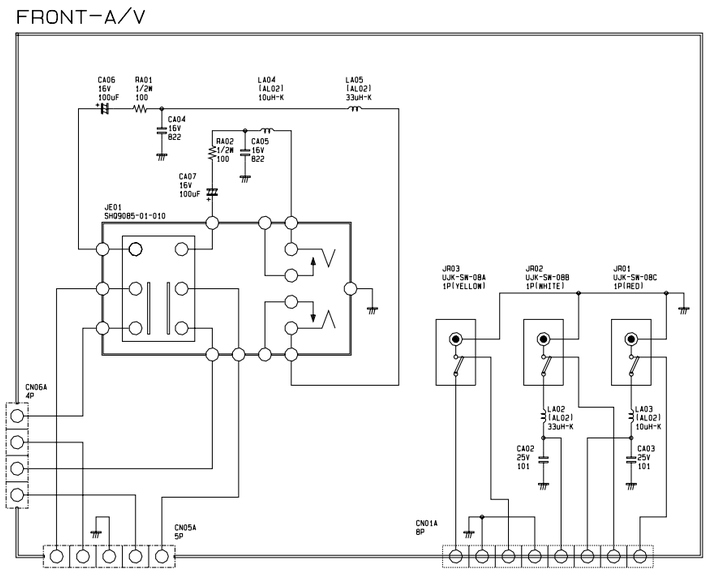
1 Resistance is shown ohm K=1.000 M=1.000.000
2 Unless otherwise noted in schematic all capacitor values less than 1 are expressed in ufd. the values more than 1 in pF.
3 Unless otherwise noted in schematic all inductor values areexpressed in uH.and the values less than 1 in mH.

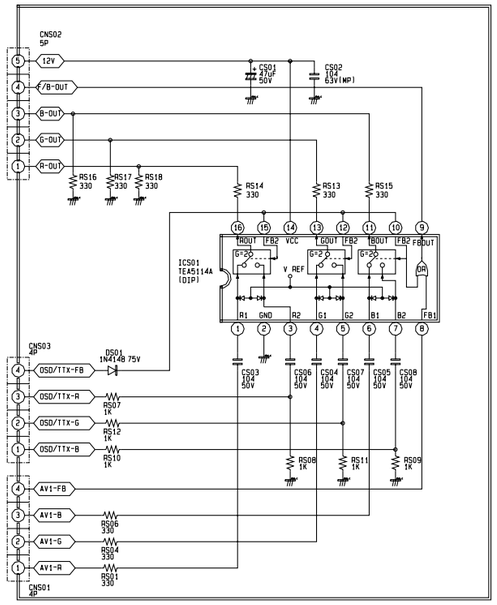
NOTE

The circuits are subject to change without notice to improve the picture quality.

SCHEMATIC DIAGRAM
CHASSIS: S51A
MODEL:
BOARD NAME: SECAN-L, L' NICAM

# 11-10 PWB MAIN (A/V FRONT / VIDEO SWITCH)




RGB - S/W MODULE

| CAPACITOR | |
|---|---|
| Ceramic - SL | No Mark |
| Ceramic - RH | (RH) |
| Ceramic - CH | (CH) |
| Polyester(Induct) | (P) |
| Polyester(Noninduct) | (PNU) |
| Polypropylene | (PP) |
| Metal Polyester | (MP) |
| M.P.Polypropylene | (MPP) |
| Tantalium | (T) |
| Non Polar | (NP) |

| RESISTOR | |
|---|---|
| Carbon | No Mark |
| Composition | (RC) |
| Metal Oxide | (RS) |
| Metal Film | (RM) |
| Fusible | (RF) |
| Cement-Wire | (RW) |
| Network | (RN) |

NOTE
1. Resistance is shown in ohm K=1,000 M=1,000,000
2. Unless otherwise noted in schematic all capacitor values less than 1 are expressed in uF. and the values more than 1 in pF.
3. Unless otherwise noted in schematic all inductor values more than 1 are expressed in uH.
4. Voltage read with V.T.V.M (input impedance 21 MΩ/all range) from point indicated to chassis ground using a color bar signal with all control at normal line voltage 120 volts.
5. Waveforms in chrominance circuit are taken receiving a color bar signal with enough sensitivity.
6. Waveforms in other circuit are taken using an signal under normal receiving conditions.
7. Voltage readings shown are normal values and may vary 20% except H.V.
8. This is fundamental circuit diagram some production changes may be made without revision of the diagram.
9. The circuits enclose in dotted lines are optional parts. (*)

WARNING : BEFORE SERVICING THIS CHASSIS READ THE 'X-RAY RADIATION PRECAUTION' 'SAFETY PRECAUTION' AND PRODUCT SAFETY NOTICE' IN MANUAL.

CAUTION : The shaded area in the schematic diagram and the parts list designate components which have special character istics important for safety and should be replaced only with types identical to those in the orignal circuit of specifed in the parts list. Before replancing and of these components. Read carefully the PRODUCT SAFETY NOTICE. In this manual. Do not degrade the safety of the receiver through improper servicing.